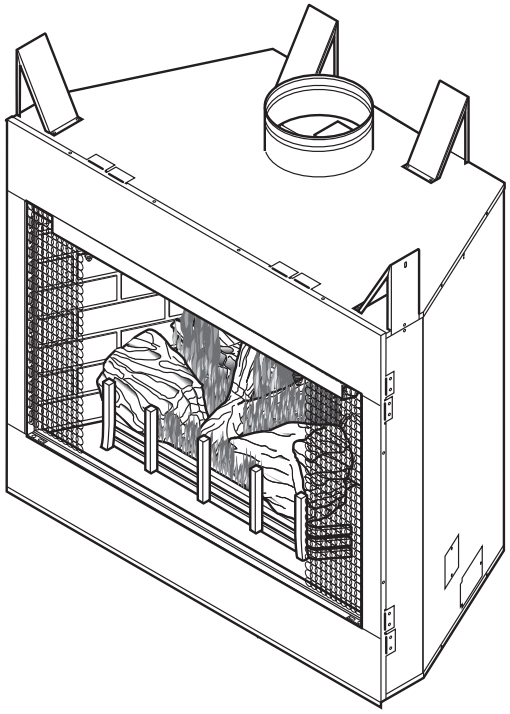
MAJESTIC

B-Vent Series
Natural Vent Gas Fireplace
Installation & Operating Instructions

Models:
400BBV, 400SBV, 500SBV



WARNING

IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.

- **Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.**
- **WHAT TO DO IF YOU SMELL GAS**
  - **Do not try to light any appliance.**
  - **Do not touch any electrical switch; do not use any phone in your building.**
  - **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
  - **If you cannot reach your gas supplier, call the fire department.**
- **Installation and service must be performed by a qualified installer, service agency or the gas supplier.**

WARNING: Improper installation, adjustment, alteration, services or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

DUE TO HIGH TEMPERATURES, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE AND DRAPERIES.

CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURE AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION.

YOUNG CHILDREN SHOULD BE SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.

CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.

KEEP THE ROOM AREA CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE AND OTHER FLAMMABLE VAPORS AND LIQUIDS.

INSTALLER: Leave this manual with the appliance.
CONSUMER: Retain this manual for future reference.

62D4037 12/09 Rev. 12

Thank you and congratulations on your purchase of an MHSC Fireplace

Please read the Installation and Operation Instructions before using the appliance!

IMPORTANT: Read all instructions and warnings carefully before starting installation.

Failure to follow these instructions may result in a possible fire hazard and will void the warranty.

Important Safety Information 3
Code Approval 4
Product Specifications
- High Elevations 5
- Gas Pressures 5
- Gas Specifications, Orifice Sizes 5

Pre-Installation Information
- Before You Start 5
- Fireplace Framing 6
- Fireplace Location 8

Clearances 8
Secure Fireplace 9
- Finish Material 9

Venting Installation 10
- Installation Precautions 10
- Installation Planning 10
- Firestops 11
- Termination 11

Outside Combustion Air 12
- Combustion Air Assembly 13

Fireplace Installation 14
- Check Gas Type 14
- Installing Gas Piping to Fireplace/Burner System Location 14

Checking Gas Pressure 16
Electrical Installation 17
- Electrical Wiring 17
- Remote Wall Mounted Switch 17
- Electronic Pilot Ignition Wiring 18

Final Installation 19
- Rock Wool Placement 19
- Log Placement 19
- Lava Rock and Ember Placement 19

Operating Instructions 20
- What To Do If You Smell Gas 20
- Lighting Pilot for the First Time 20
- Lighting Pilot 21
- Lighting Burner 22
- Lighting Electronic IGN 23
- To Turn Off Gas 23

Cleaning and Maintenance 24
- Burner, Pilot and Control Compartment 24
- Pilot Flame 24
- Burner 24
- Burner Flame 24
- Vent System 25
- Logs 25
- Rock Wool 25

Replacement Parts 26
- Firebox Components 26
- Logs 26
- Standing Pilot - Millivolt Control 28
- Electronic Ignition 30

Troubleshooting 32
Warranty 39

INSTALLER

Please leave these instructions with the appliance.

OWNER

Please retain these instructions for future reference.

WARNING

- **Read this owner's manual carefully and completely before trying to assemble, operate, or service this fireplace.**
- **Any change to this fireplace or its controls can be dangerous.**
- **Improper installation or use of this fireplace can cause serious injury or death from fire, burns, explosions, electrical shock and carbon monoxide poisoning.**

This fireplace is a decorative gas appliance. This fireplace must be properly installed by a qualified service person.

CARBON MONOXIDE POISONING: Early signs of carbon monoxide poisoning are similar to the flue with headaches, dizziness and/or nausea. If you have these signs, the fireplace may not have been installed properly. Get fresh air at once! Have the fireplace inspected and serviced by a qualified service person. Some people are more affected by carbon monoxide than others. These include pregnant women, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

Propane/LP gas and natural gas are both odorless. An odor-making agent is added to each of these gases. The odor helps you detect a gas leak. However, the odor added to these gases can fade. Gas may be present even though no odor exists.

Make certain you read and understand all warnings. Keep this manual for reference. It is your guide to safe and proper operation of this fireplace.

1. This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases unless a certified kit is used.
2. For propane/LP fireplace, do not place propane/LP supply tank(s) inside any structure. Locate propane/LP supply tank(s) outdoors. To prevent performance problems, do not use propane/LP fuel tank of less than 100 lbs. capacity.
3. If you smell gas:
   - shut off gas supply
   - do not try to light any appliance
   - do not touch any electrical switch; do not use any phone in your building
   - immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
4. Never install the fireplace:
   - in a recreational vehicle
   - where curtains, furniture, clothing, or other flammable objects are less than 42" from the front, top or sides of the fireplace
   - in high traffic areas
   - in windy or drafty areas
5. This fireplace reaches high temperatures. Keep children and adults away form hot surfaces to avoid burns or clothing ignition. Fireplace will remain hot for a time after shutdown. Allow surfaces to cool before touching.
6. Carefully supervise young children when they are in the room with fireplace.
7. Do not modify fireplace under any circumstances. Any parts removed for servicing must be replaced prior to operating fireplace.
8. Turn fireplace off and allow to cool before servicing, installing or repairing. Only a qualified service person should install, service or repair the fireplace. Have burner system inspected annually by a qualified service person.
9. You must keep control compartments, burners and circulating air passages clean. More frequent cleaning may be needed due to excessive lint and dust form carpeting, bedding material, pet hair, etc. turn off the gas valve and pilot light before cleaning fireplace.
10. Have venting system inspected annually by a qualified service person. If needed, have venting system cleaned or repaired. Refer to *Cleaning and Maintenance*, *Page 24*.
11. Keep the area around your fireplace clear of combustible materials, gasoline and other flammable vapor and liquids. Do not run fireplace where these are used or stored. Do not place items such as clothing or decorations on or around fireplace.
12. Do not use this fireplace to cook food or burn paper or other objects.
13. Never place anything on top of fireplace.

Continued on Page 4

Continued on Page 4

14. Do not use any solid fuels (wood, coal, paper, cardboard, etc.) in this fireplace. Use only the gas type indicated on rating plate.
15. This appliance, when installed, must be electrically grounded in accordance with local codes or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70* or the *Canadian Electrical Code, CSA C22.1.*
16. Do not obstruct the flow of combustion and ventilation air in any way. Provide adequate clearances around air openings into the combustion chamber along with adequate accessibility clearance for servicing and proper operation.
17. When the appliance is installed directly on carpeting, tile or other combustible material other than wood flooring, you must set appliance on a metal or wood panel or hearth pad extending the full width and depth of the appliance.
18. Do not use fireplace if any part has been exposed to or has been under water. Immediately call a qualified service person to arrange for replacement of the unit.
19. Do not operate fireplace if any log is broken.
20. Do not use a blower fireplace, heat exchanger fireplace or any other accessory not approved for use with this fireplace.
21. The fireplace is not intended for use with a thermostat.
22. This appliance must be installed with draft hood in same atmospheric pressure zone as the combustion air inlet to the appliance.
23. **For Massachusetts Residents Only:** This product must be installed by a licensed plumber or gas fitter when installed within the Commonwealth of Massachusetts. Flexline installation must not exceed 36”.

IMPORTANT:

PLEASE READ THE FOLLOWING CAREFULLY

It is not unusual for gas fireplace to give off some odor the first time it is burned. This is due to the manufacturing process.

Please ensure that your room is well ventilated during burn off - open all windows.

It is recommended that you burn your fireplace for at least en (10) hours the first time you use it.

IMPORTANT:

PLEASE READ THE FOLLOWING CAREFULLY

It is normal for fireplaces fabricated of steel to give off some expansion and/or contraction noises during the start up or cool down cycle. Similar noises are found with your furnace heat exchanger or car engine.

NATIONAL FIREPLACE INSTITUTE® NFI CERTIFIED www.nficertified.org

We recommend that our gas hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Gas Specialists.

WARNING

Never connect unit to private (non-utility) gas wells. This gas is commonly known as wellhead gas.

WARNING

Proposition 65 Warning: Fuels listed in gas, wood burning or oil fired appliances, and the products of combustion of such fuels, contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

California Health and Safety Code Sec. 25249.6

CODE APPROVAL

These appliances have been tested by CSA and found to comply with the established standards for VENTED GAS FIREPACES in the US and Canada as follows:

LISTED VENTED GAS FIREPLACE

TESTED TO: ANSI Z21.50a-2008 CSA2.22a-2008

PRODUCT SPECIFICATIONS

- This appliance has been certified for use with either natural or propane gas. See appropriate data plates.
- This appliance is not for use with solid fuels.
- The appliance must be installed in accordance with local codes if any. If none exist use the current installation code, ANSI Z223.1/NFPA 54 in the US and CSA B149 in Canada.
- The appliance must be properly connected to a venting system.
- The appliance is not approved for closet or recessed installations.

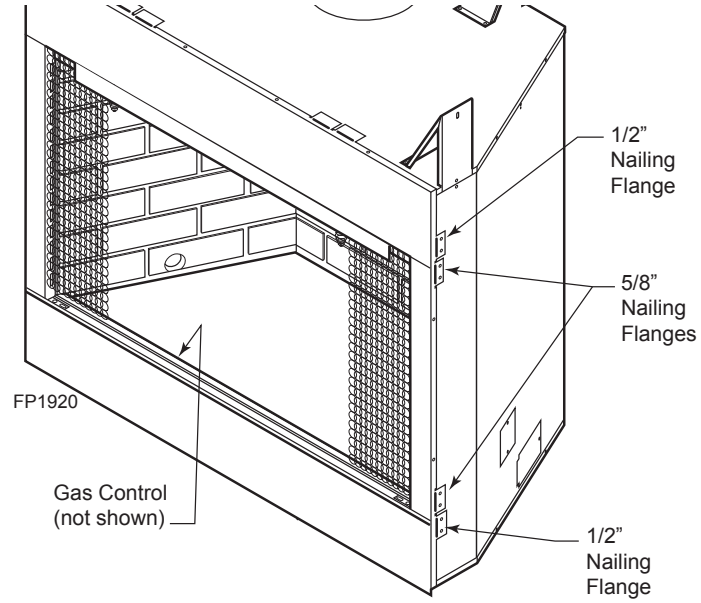


Figure 1 - BBV/SBV Fireplace

HIGH ELEVATIONS

Input ratings are shown in BTU per hour and are certified without deration for elevations up to 4,500 feet (1,370 m) above sea level.

For elevations above 4,500 feet (1,370 m) in USA, installation must be in accordance with the current ANSI Z223.1/NFPA 54 and/or local codes having jurisdiction.

In Canada, please consult provincial and/or local authorities having jurisdiciton for installation at elevations above 4,500 feet (1,370 m).

GAS PRESSURES

	Natural	Propane (LP)
Inlet Minimum	4.5” w.c.	11.0” w.c.
Inlet Maximum	10.5” w.c.	13.0” w.c.
Manifold Pressure	3.5” w.c.	10.0” w.c.

GAS SPECIFICATIONS & ORIFICE SIZE

Model	Fuel	Max.Input BTU/h	Min. Input BTU/h	Orifice Size
400BBVNV	Nat.	22,000	16,000	#43
400BBVPV	LP	22,000	14,500	#55
400SBVNV	Nat.	29,000	16,500	#41
400SBVPV	LP	29,000	16,300	#53
500SBVNV	Nat.	31,500	19,000	#37
500SBVPV	LP	31,500	20,000	#52

BEFORE YOU START

Read this homeowner manual thoroughly and follow all instructions carefully. Inspect all contents for shipping damage and immediately inform your dealer if any damage is found. Do not install any unit with damaged, incomplete, or substitute parts. Check your packing list to verify that all listed parts have been received. You should have the following:

- Fireplace (Firebox and Burner System)
- Log Set
- Rock Wool
- Switch Cover Plate
- Ziplock Bag 2” x 3” x 3”
- Volcanic Rock
- White Toggle Switch
- Plastic Bag (1)

ITEMS REQUIRED FOR INSTALLATION

- Phillips Screwdriver
- Hammer
- Saw and/or saber saw
- Electric Drill and Bits
- Pliers
- Square
- Framing Materials
- Wall Finishing Materials
- Level
- Tee Joint
- Measuring Tape
- Pipe Wrench
- Caulking Material (Noncombustible)
- Fireplace Surround Material (Noncombustible)
- Piping Complying with Local Codes
- Pipe Sealant Approved for use with Propane/LPG (Resistant to Sulfur Compounds)

FIREPLACE FRAMING

Firebox framing can be built before or after the appliance is set in place. Construct firebox framing following *Figures 2 or 3* for your specific installation requirements. Refer to *Figures 2 & 3* for firebox dimensions. The framing headers may rest on the top of the firebox standoffs.

The firebox may be installed directly on a combustible floor or raised on a platform of an appropriate height. When the firebox is installed directly on carpeting, tile or other combustible material, other than wood flooring, the firebox shall be installed on a metal or wood panel extending the full width and depth of the enclosure.

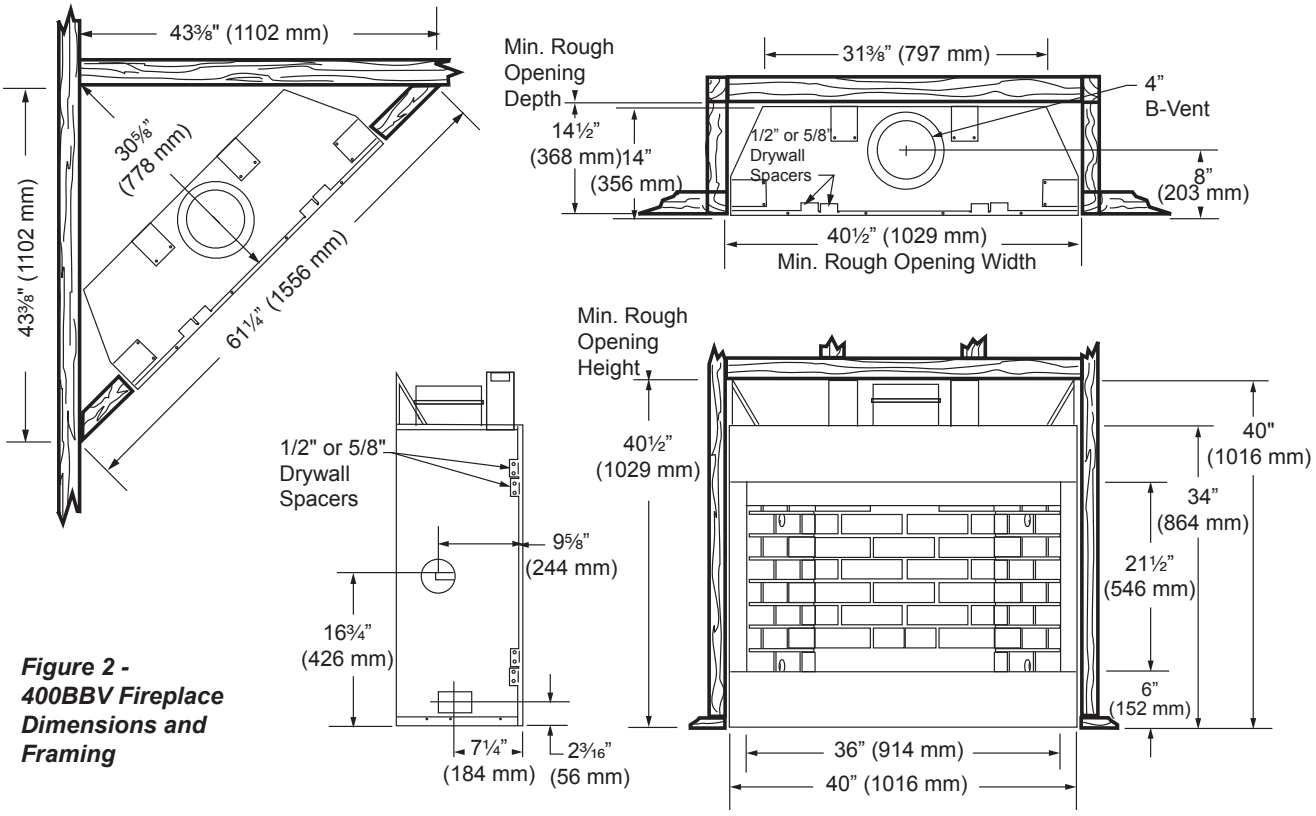


Figure 2 - 400BBV Fireplace Dimensions and Framing

WARNING

Do not fill spaces around firebox with insulation or other materials. This could cause a fire.

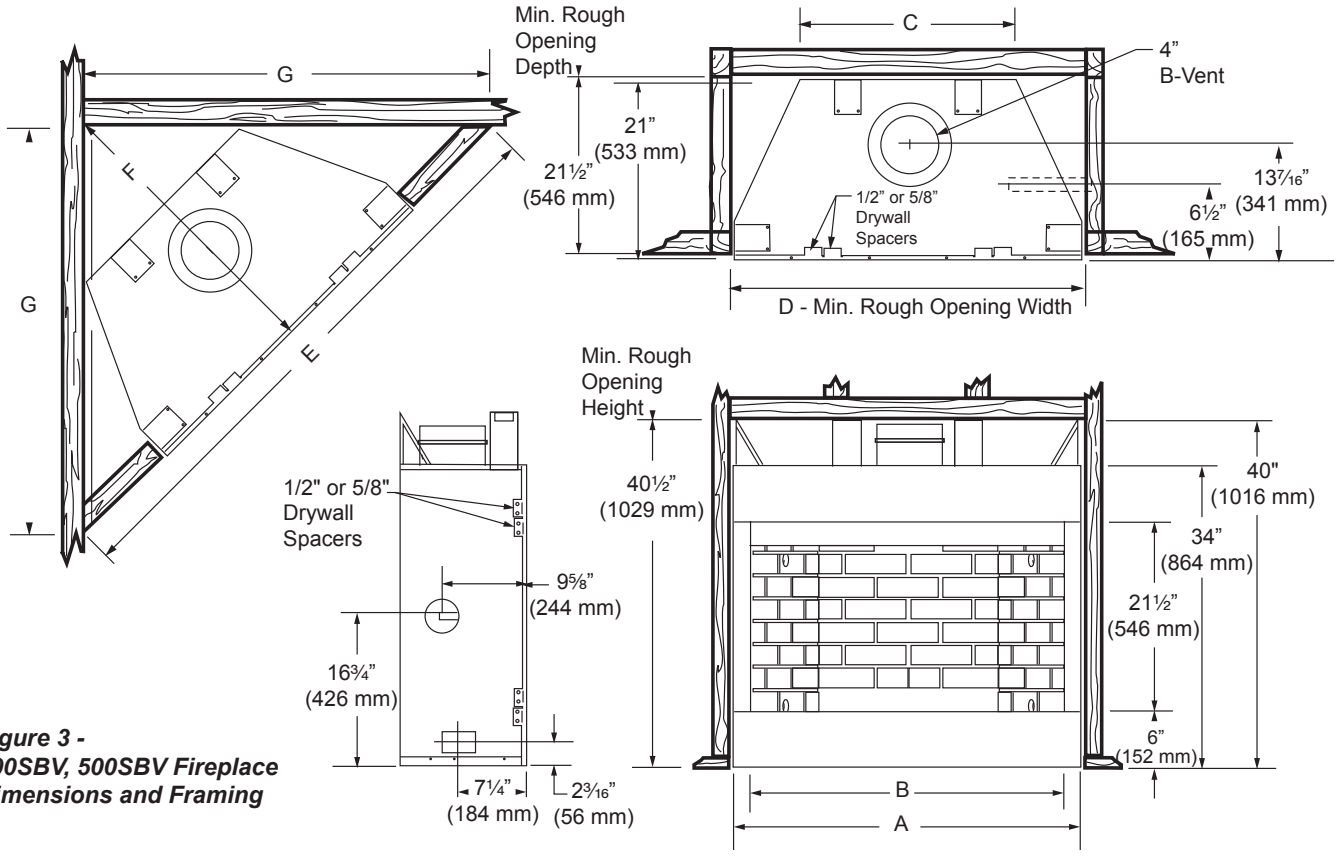


Figure 3 - 400SBV, 500SBV Fireplace Dimensions and Framing

Ref.	400SBV		500SBV	
A	40"	(1016 mm)	46"	(1168 mm)
B	36"	(914 mm)	42"	(1067 mm)
C	24¹³⁄₁₆"	(630 mm)	30¹³⁄₁₆"	(783 mm)
D	40½"	(1029 mm)	46½"	(1181 mm)
Framing Dimensions				
E	67⅞"	(1724 mm)	73⅞"	(1876 mm)
F	34"	(864 mm)	37"	(940 mm)
G	48"	(1219 mm)	52¼"	(1327 mm)

NOTE

For easier installation on 400SBV and 500SBV units, place gas supply pipe 6" to 8" inside unit. Measure from the center of the gas knock-out hole located at the bottom of the left side.

FIREPLACE LOCATION

Plan for the installation of your appliance. This includes determining where the unit is to be installed, the vent configuration to be used, framing and finishing details, and whether any optional accessories (i.e. wall switch, or remote control) are desired. Consult your local building code agency to ensure compliance with local codes, including permits and inspections.

The following factors should be taken into consideration:

- Clearance to side-wall, ceiling, woodwork and windows. Minimum clearances to combustibles must be maintained.
- This fireplace may be installed along a wall, across a corner or use an exterior chase.
- Location should be out of high traffic areas and away form furniture and draperies due to heat from appliance.
- Never obstruct the front opening of the fireplace.
- Do not install in the vicinity where gasoline or other flammable liquids may be stored.
- Vent pipe routing. Refer to Venting section found in this manual for allowable venting configurations.
- These units can be installed in a bedroom. Refer to the National Fuel Gas Code ANSI Z233.1/ NFPA 54 - (current edition), the Uniform Mechanical Code - (current edition), and Local Building Codes for specific installation requirements.

CLEARANCES TO COMBUSTIBLES

WARNING

Follow these instructions carefully to ensure safe installation. Failure to follow instructions exactly can create a fire hazard.

The appliance cannot be installed on a carpet, tile or other combustible material other than wood flooring. If installed on carpet or vinyl flooring, the appliance shall be installed on a metal, wood or noncombustible material panel extending full width and depth of the appliance.

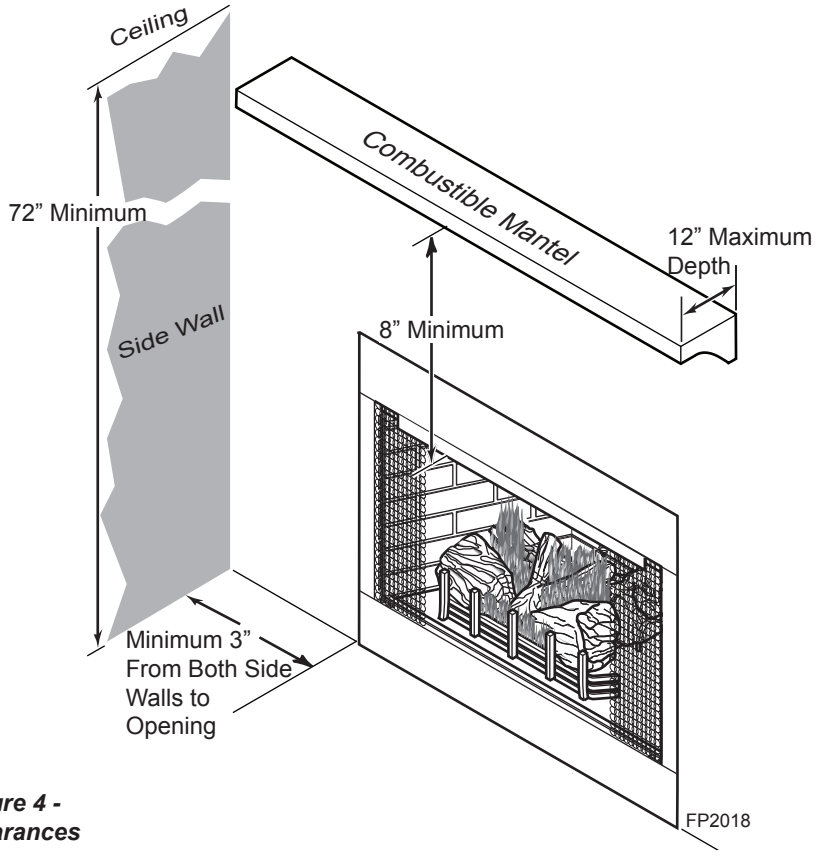


Figure 4 - Clearances

The fireplace must be secured to the floor and/or to framing studs as shown in *Figure 5*. Use two (2) wood screws or masonry/concrete screws to secure fireplace to the floor. Use four (4) screws to attach fireplace to framing. The side brackets are adjustable from 1/2" to 5/8" to accommodate different thicknesses of material.

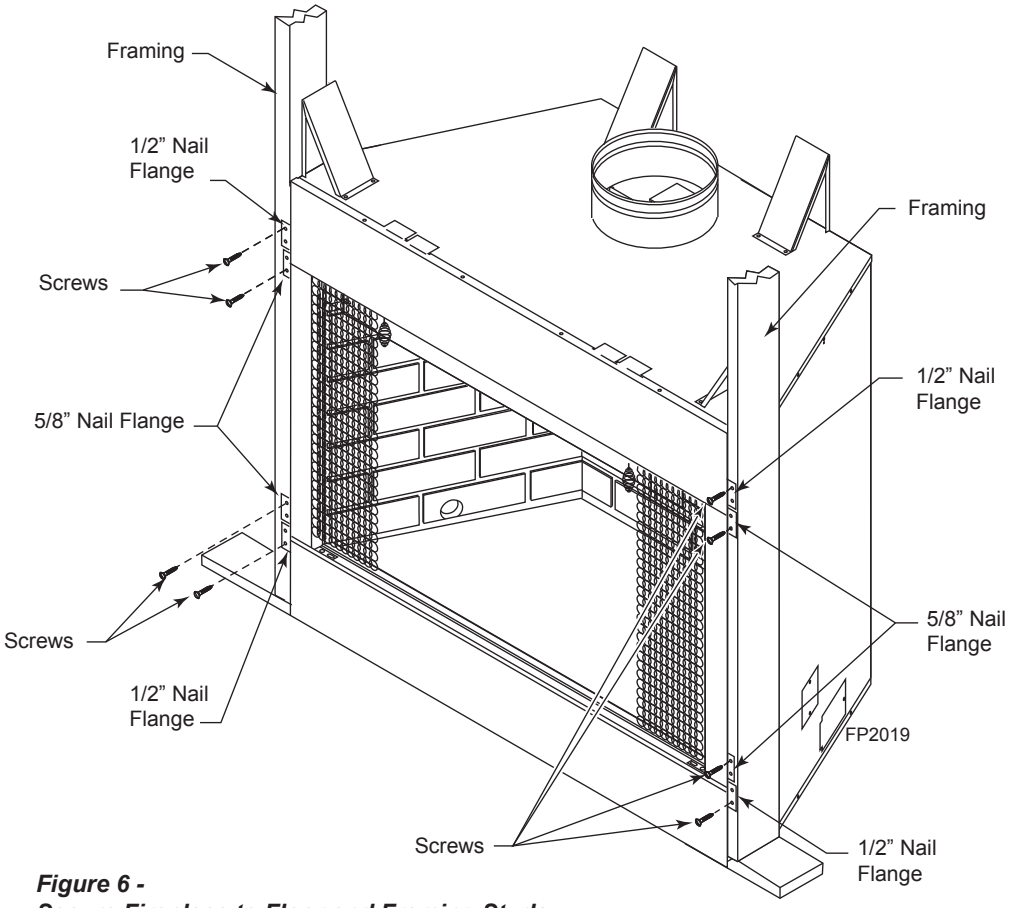


Figure 6 -
Secure Fireplace to Floor and Framing Studs

FINISHING MATERIAL

NOTE: Any remote wiring (i.e. remote control and wall switch) must be done prior to final finishing to avoid costly reconstruction.

WARNING

Never obstruct or modify the air inlet. This may create a fire hazard.

Only noncombustible materials (i.e. brick, tile, slate, steel or other materials with a UL fire rating of Zero) may be used to cover the black surface of the appliance. A 300° F minimum adhesive may be used to attach facing materials to the black surface. If joints between the finished wall and the fireplace surround are sealed, a 300° F minimum sealant material (General Electric RTV 103 or equivalent) must be used.

WARNING **Read all instructions completely and thoroughly before attempting installation. Failure to do so could result in serious injury, property damage or loss of life. Operation of improperly installed and maintained venting system could result in serious injury, property damage or loss of life.**

NOTICE **Failure to follow these instructions will void the warranty.**

INSTALLATION PRECAUTIONS

Consult local building codes before beginning the installation. The installer must make sure to select the proper vent system for installation. Before installing vent kit, the installer must read this fireplace manual and vent kit instructions.

Only a qualified installer/service person should install venting system. The installer must follow these safety rules:

- Wear gloves and safety glasses for protection.
- Use extreme caution when using ladders or when on rooftops.
- Be aware of electrical wiring locations in walls and ceilings.

The following actions will void the warranty on your venting system:

- Installation of any damaged venting component.
- Unauthorized modification of the venting system.
- Installation of any component part not manufactured or approved by MHSC.
- Installation other than permitted by these instructions.

INSTALLATION PLANNING

"B" VENT PIPE

See venting installation instructions provided by the B-Vent manufacturer.

NOTE: This APPLIANCE MUST BE INSTALLED using "B" vent type pipe that has been listed by a nationally recognized testing agency.

Refer to B-Vent Pipe Sizing chart for proper elbow offset runs.

B-Vent Pipe Sizing		
400BBV	400SBV	500SBV
4"	6"	6"

Chimney centerline dimensions are referenced on *Pages 6 & 7, Figures 2 & 3*.

- Minimum vertical chimney height - 8' as measured from top of unit to top of termination.
- Maximum vertical height - 40' as measured from top of unit to top of termination.
- Minimum chimney height with two (2) 90° elbows - 8'.
- Elbow requirements: Allow a maximum of two (2) 90° elbows or four (4) 45° elbows per installation. ***NOTE: Two (2) 45° elbows = one (1) 90° elbow***
- Horizontal run must never exceed 50% of the height of the vent system. Horizontal runs are measured center pipe to center pipe.
- Horizontal runs must have a minimum 1/4" rise per foot and may not run level or down hill.

Attaching 4" Flue to BBV:

- The first section of B-vent flue should overlap the appliance collar. The appliance collar may be crimped to ease the installation of the first section of flue.
- Do not penetrate the pipe inner liner with sheet metal screws. Attach the initial flue section to the top of the firebox chassis with 1/4" self-tapping screws and plumbers strap. Attach the strap toward the bottom of the flue section and pull taut for proper tension to the firebox.

Attaching 6" Flue to SBV:

- The 6" appliance collar is slightly larger that the inner wall of most B-vent 6" pipe sections. Install the first section of B-vent by slipping the flue's inner wall tot he inside of the appliance collar. The B-vent outer wall will slip to the outside of the appliance collar.
- Do not penetrate the pipe inner line with sheet metal screws. Attach the initial flue section tot he top of the firebox chassis with 1/4" self-tapping screws and plumber's strap. Attach the strap toward the bottom of the flue section and pull taut for proper tension to the firebox.

Support the Pipe

- Support horizontal runs a minimum of every five (5) feet. Refer to vent manufacturer's instructions for proper support on vertical runs (45° or less).
- Support offsets so the weight of the pipe is not bearing down on the elbows.

FIRESTOPS

- Locate chimney centerline dimension from a combustible back wall. *Figures 2 & 3.* Minimum firestop dimensions are found in the vent manufacturer's instructions. Clearances to combustibles may also be found on the sides of the flue sections.
- Avoid cutting any load-bearing framing members. *Figures 6 & 7*

To position firestop refer to *Figures 6 & 7*. Only one firestop is required per frame.

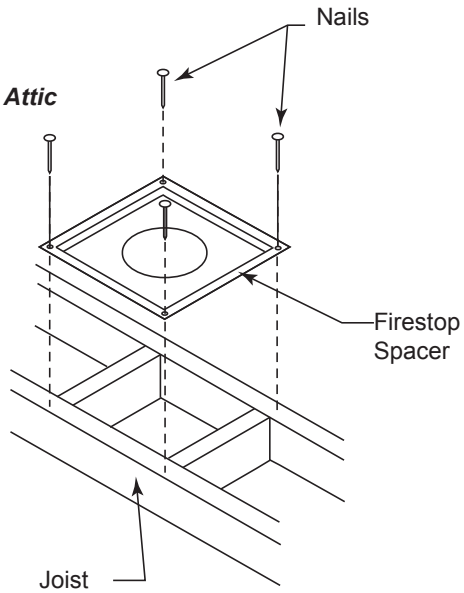


Figure 6 - Install Firestop in Attic

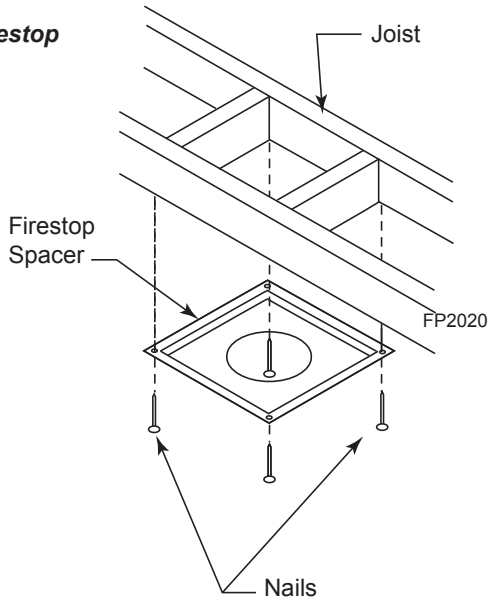


Figure 7 - Install Firestop in Ceiling

NOTICE: When installing in a chase, you should insulate the chase as you would the outside walls of your home. This is especially important in cold climates. Insulation should be considered a combustible material. Maintain proper clearances to all combustible materials.

NOTICE: Treatment of firestops and construction of the chase may vary from building type to building type. These instructions are not substitutes for the requirements of local building codes. You must follow all local building codes.

TERMINATE THE PIPE

- Maintain proper clearance to the roof using the chart below.
- Vents shall terminate at least 8' from a vertical wall.
- Maintain 2' minimum clearance to any other gas terminations or plumbing vents, as measured from the outside edge of the terminations or vents.

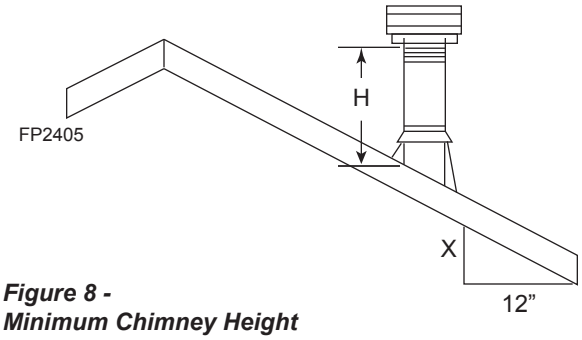


Figure 8 - Minimum Chimney Height

Termination Height Table

Use this table to determine the minimum height avove the roof

Roof Pitch	Minimum Height	
	Feet	Meters
Flat to 7/12	1	0.3
Over 7/12 to 8/12	1.5	0.46
Over 8/12 to 9/12	2	0.61
Over 9/12 to 10/12	2.5	0.76
Over 10/12 to 11/12	3.25	0.99
Over 11/2 to 12/12	4	1.22
Over 12/12 to 14/12	5	1.52

NOTE: The use of outside air for combustion is optional unless required by building codes. It is only necessary to supply outside combustion air to one side of fireplace. Use model OAC4 combustion air kit (refer to Page 17).

1. Avoid extremely long runs and numerous turns in duct leading from fireplace to combustion air assembly. These conditions increase the resistance to free flow of air through duct. *Figures 9 and 10*
2. Locate combustion air assembly at an exterior location. Make sure the location cannot be accidentally blocked. Locate assembly above snow line to prevent snow from blocking assembly.
3. Never mount combustion air inlet assembly in garage or storage area where combustible fumes (gasoline) might be drawn into fireplace.
4. Combustion air may be drawn from crawl space under house when adequate supply of air is provided by open ventilation. *Figure 9*

NOTE: Never take combustion air from attic space or garage space.

NOTE: Install outside combustion air ONLY ON LEFT-HAND SIDE of fireplace.

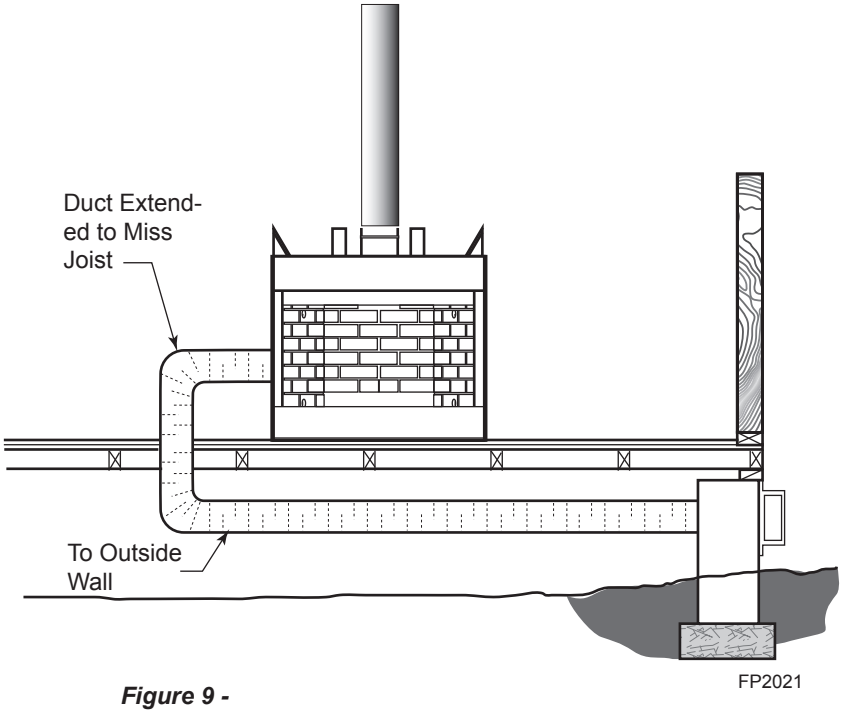


Figure 9 -
Install Unit Above Basement or Crawl Space

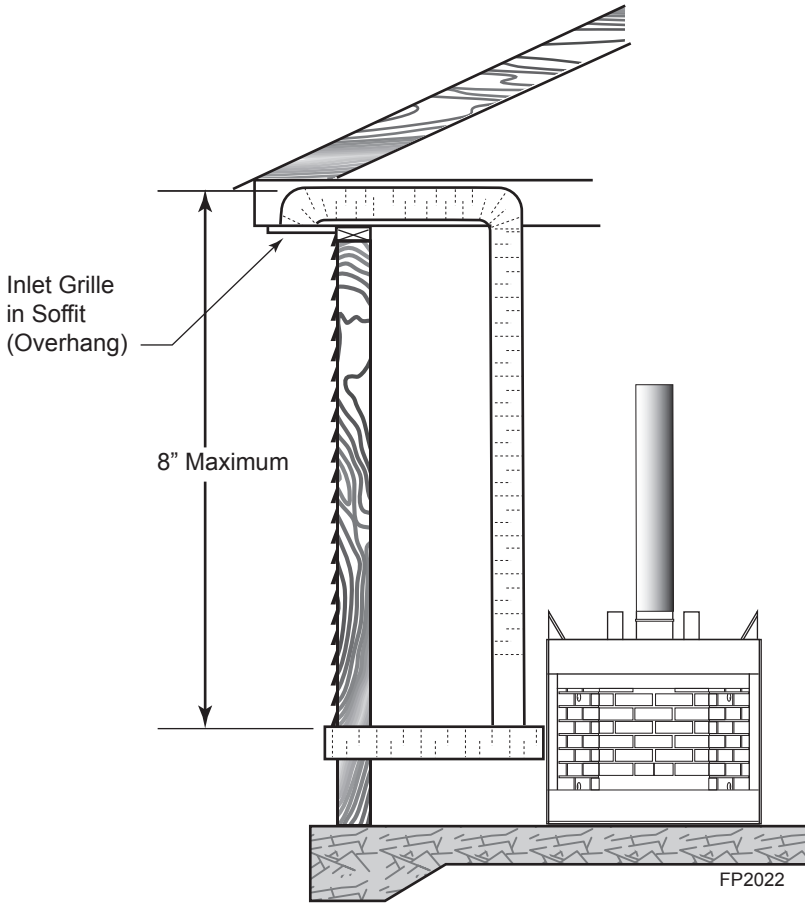


Figure 10 -
Install Unit on Concrete Slab with Optional Outside Air Runs

MODEL OAC-4 COMBUSTION AIR ASSEMBLY

1. Remove the cover plate from the 4” outlet opening location on the left outside of the fireplace.
2. Place starting collar (4”) into hole on left side of fireplace. Fireplace shortest side of air starting collar through fireplace outer wrap. Fasten starting collar in place with four (4) sheet metal screws provided. *Figure 11*

NOTE: The air starting collar extends through the fireplace outer wrap. When the air starting collar is securely attached, it will form a seal against the fireplace wall.

3. Cut a 6” diameter opening for model OAC-4 in the outside wall covering where the outside vent is to be located. *Figure 13*
4. Select and cut a piece of duct long enough to attach to the fireplace and stick out at least 3” beyond the face of the wall to which the OAC-4 inlet air vent will be attached. Cut duct with a standard pocket knife. *Figure 12*

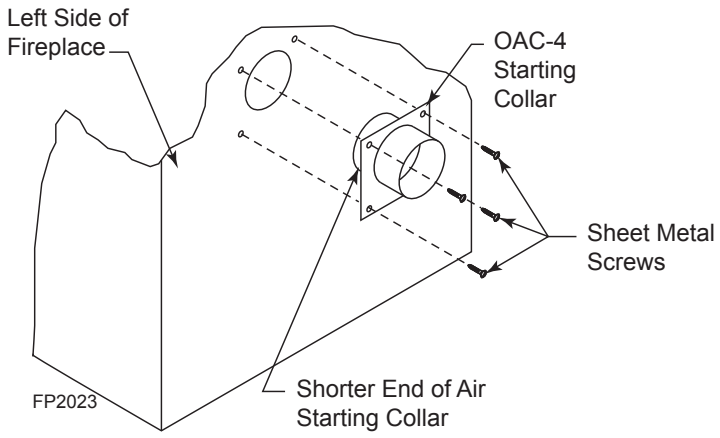


Figure 11 -
Attach Outside Air Starting Collar to Left Side of Fireplace

5. If using insulating duct, push the insulation back from one end of the duct approximately 2”. *Figure 13*
6. Slip the exposed end of the duct over the starting collar on the fireplace.
7. Using the sheet metal screws provided, secure the duct end to the collar attached to the fireplace.
8. Nail or screw the combustion air assembly to the surface of the wall.

WARNING

DO NOT remove the cover if the outside air will not be connected.

WARNING

Do not use a combustible duct. Always use UL Listed Class 0 or 1 duct material. If necessary to splice duct, use Model 403 duct connector to splice duct sections.

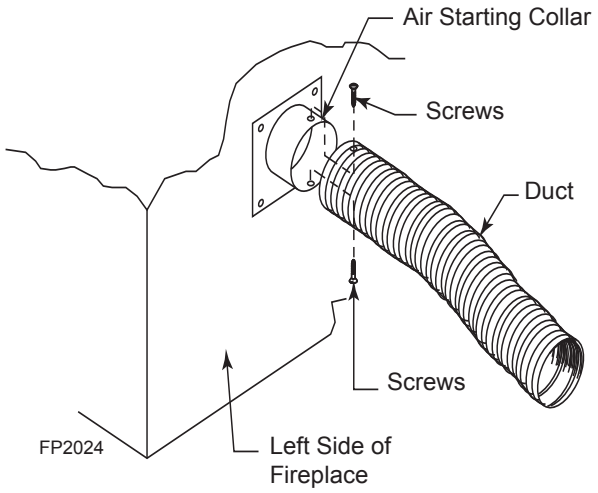


Figure 12 -
Attach Outside duct to Starting Collar

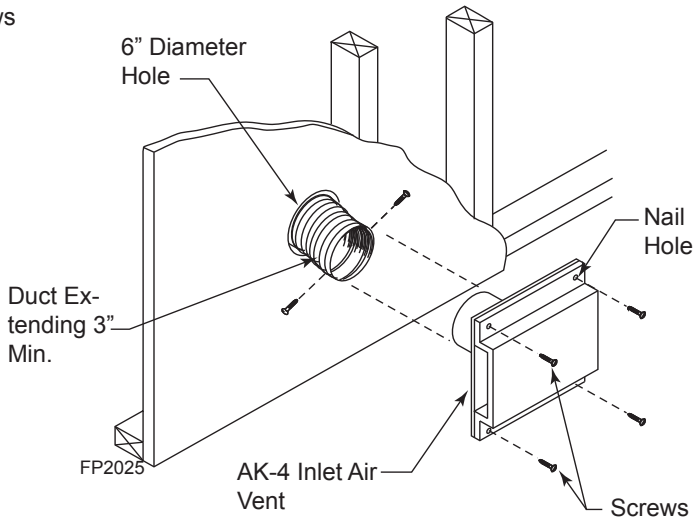


Figure 13 -
Combustion Air Assembly for Model No. OAC-4

CHECK GAS TYPE

Use proper gas type for the fireplace you are installing. If you have conflicting gas types, do not install fireplace. See dealer where you purchased the fireplace for proper fireplace for your gas type.

INSTALLING GAS PIPING TO FIREPLACE LOCATION

INSTALLATION ITEMS NEEDED

Before installing, make sure you have the items listed below:

- External regulator (supplied by installer)
- Piping (check local codes)
- Sealant (resistant to propane/LP gas)
- Test gauge connection*
- Sediment trap (optional but recommended)
- Approved flexible gas line with gas connector (if allowed by local codes - not provided)
- Tee Joint
- Pipe wrench

*A CSA design-certified equipment shutoff valve with 1/8" NPT tap is an acceptable alternative to test gauge connection. Purchase the CSA design-certified equipment shutoff valve from your dealer.

WARNING **A qualified installer or service person must connect appliance to gas supply. Follow all local codes.**

CAUTION **For propane/LP units, never connect fireplace directly to the propane/LP supply. This burner system requires an external regulator (not supplied). Install the external regulator between the burner system and propane/LP supply.**

For propane/LP connections only, the installer must supply an external regulator. The external regulator will reduce incoming gas pressure. You must reduce incoming gas pressure to between 11 and 13 inches of water. If you do not reduce incoming gas pressure, burner system regulator damage could occur. Install external regulator with the vent pointing down as shown in *Figure 14*. Pointing the vent down protects it from freezing rain or sleet.

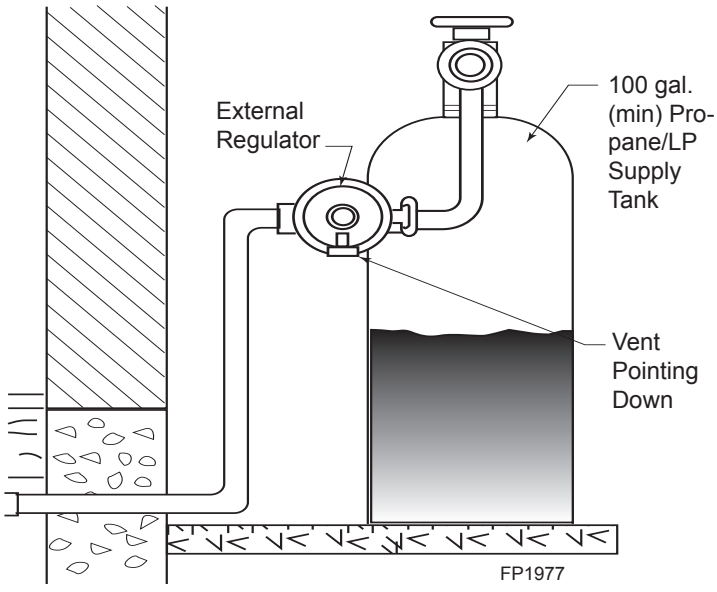


Figure 14 - External Regulator with Vent Pointing Down (Propane/LP Only)

CAUTION **Use only new black iron or steel pipe. Internally tinned copper or copper tubing can be used per National Fuel Code, section 2.6.3, providing gas meets hydrogen sulfide limits, and where permitted by local codes. Gas piping system must be sized to provide minimum inlet pressure (listed on data plate) at the maximum flow rate (BTU/hr). Undue pressure loss will occur if the pipe is too small.**

WARNING **External regulators may be necessary for natural gas. One- or two-pound systems will damage this appliance and may cause fire hazard.**

When using copper or flex connectors use only fittings approved for gas connections. The gas control inlet is 3/8" NPT.

WARNING **Only persons licensed to work with gas piping may make the necessary gas connections to this appliance.**

CAUTION **A manual shut-off valve must be installed upstream of the appliance. Union tee and plugged 1/8" NPT pressure tapping point should be installed upstream of the appliance.** *Figure 17*

NOTE: The gas line connection may be made using 1/2" rigid tubing or an approved flex connector. Since some municipalities have additional local codes, it is always best to consult your local authorities and the current edition of the National Fuel Gas Code ANSI Z223.1/NFPA 54. In Canada CSA-B149 (1 or 2) Installation Code.

A listed manual shut-off valve must be installed upstream of the appliance. Union tee and plugged 1/8" NPT pressure tapping point should be installed upstream of the appliance. *Figure 15*

IMPORTANT: Install main gas valve (equipment shut-off valve) in an accessible locations. The main gas valve is for turning on or shutting off the gas to the fireplace.

Check your building codes for any special requirements for locating equipment shut-off valve to fireplaces.

CAUTION **Use pipe joint sealant that is resistant to liquid petroleum (LP) gas.**

Apply pipe joint sealant lightly to male threads. This will prevent excess sealant form going into pipe. Excess sealant in pipe could result in clogged burner system valves.

We recommend that you install a sediment trap/drip leg in supply line as shown in *Figure 15*. Locate sediment trap/drip leg where it is within reach for cleaning. Install in piping system between fuel supply and burner system. Locate sediment trap/drip leg where trapped matter is not likely to freeze. A sediment trap traps moisture and contaminants. This keeps them from going into the burner system gas controls. If sediment trap/drip leg is not installed or is installed wrong, burner system may not run properly.

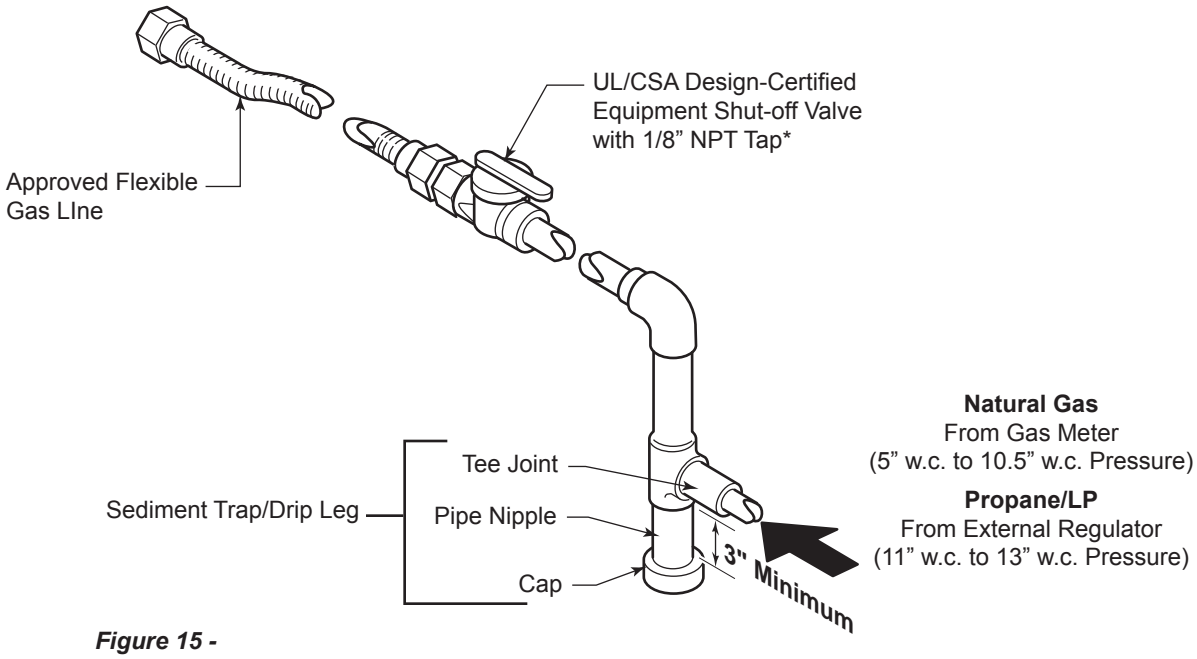


Figure 15 -
Gas Connection

FP1978

1. Check gas type. The gas supply must be the same as stated on the appliance's rating decal. If the gas supply is different from the fireplace, **STOP!** Do not install the appliance. Contact your dealer immediately.
2. To ease installation, a 30" (762 mm) flex line with manual shut-off valve has been provided with this appliance. Install and attach 1/2" gas line onto shut-off valve.
3. After completing gas line connection, purge air from gas line and test all gas joints from the gas meter to the fireplace for leaks. Use a solution of 50/50 water and soap or a gas sniffer.
4. To adjust flame height, turn HI/LO knob to HI to get maximum pressure to burner. Turn HI/LO knob to LO to get minimum pressure.
5. To check gas pressures at valve, turn captured screw counterclockwise 2 or 3 turns and then place tubing to pressure gauge over test point. Turn unit to high. *Figure 16.* After taking pressure reading, be sure and turn captured screw clockwise firmly to reseal. Do not over torque. Check test points for gas leaks.

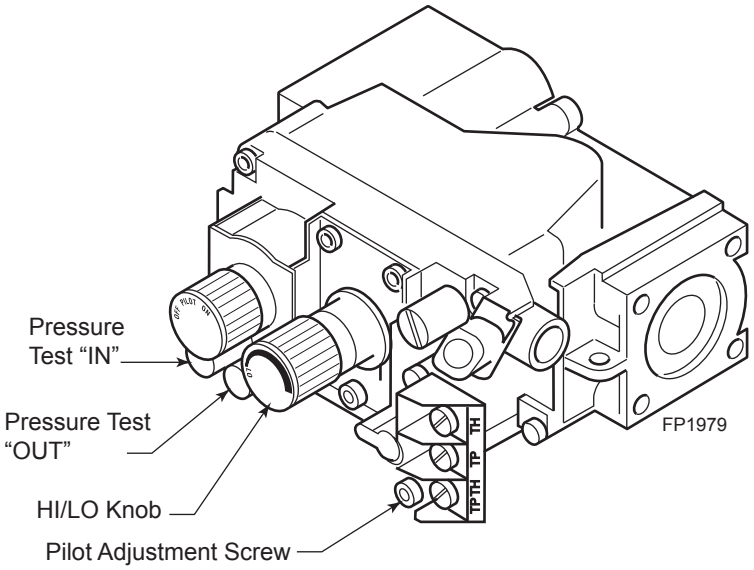


Figure 16 -
Gas Pressure Check at Gas Valve

WARNING

Do not use open flame to check for gas leaks.

ELECTRICAL WIRING

WARNING

Electrical connections should only be performed by a qualified, licensed electrician. Main power must be off when connecting to main electrical power supply or performing service. All wiring shall be in compliance with all local, city and state codes. The appliance, when installed, just be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code ANSI/NFPA 70 (latest edition) and Canadian Electrical Code, CSA C22.1.

CAUTION

Label all wires before disconnecting when servicing controls. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

REMOTE WALL MOUNTED SWITCH

A remote wall switch and up to fifteen (15) feet of 18 Ga. wire may be used with this appliance. Attach the wall switch in a junction box at the desired location on the wall. *Figure 16.* Do not extend beyond the wall switch wire length provided.

NOTE: Extended lengths of wire may cause the fireplace not to function properly. Longer length of wire is permitted if the wire is made out of larger gauge (diameter) wire. Always check with local codes.

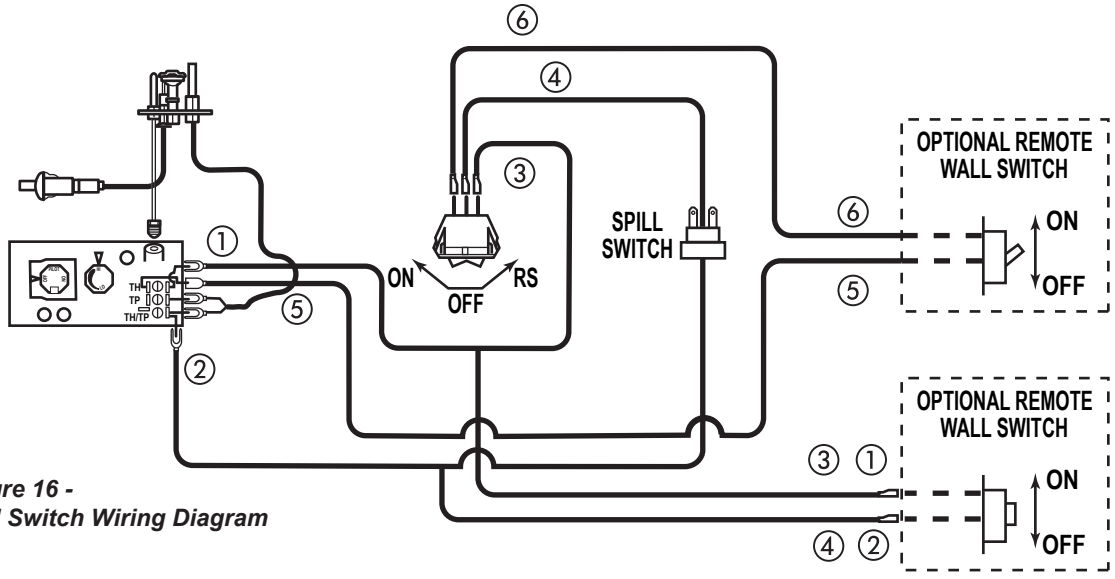


Figure 16 -
Wall Switch Wiring Diagram

WARNING

Do not connect wall switch to AC (110 V) circuit.

ELECTRONIC PILOT IGNITION WIRING

WARNING

Do not connect 110-120V AC to the Remote Wall Switch. The appliance will malfunction or destroyed.

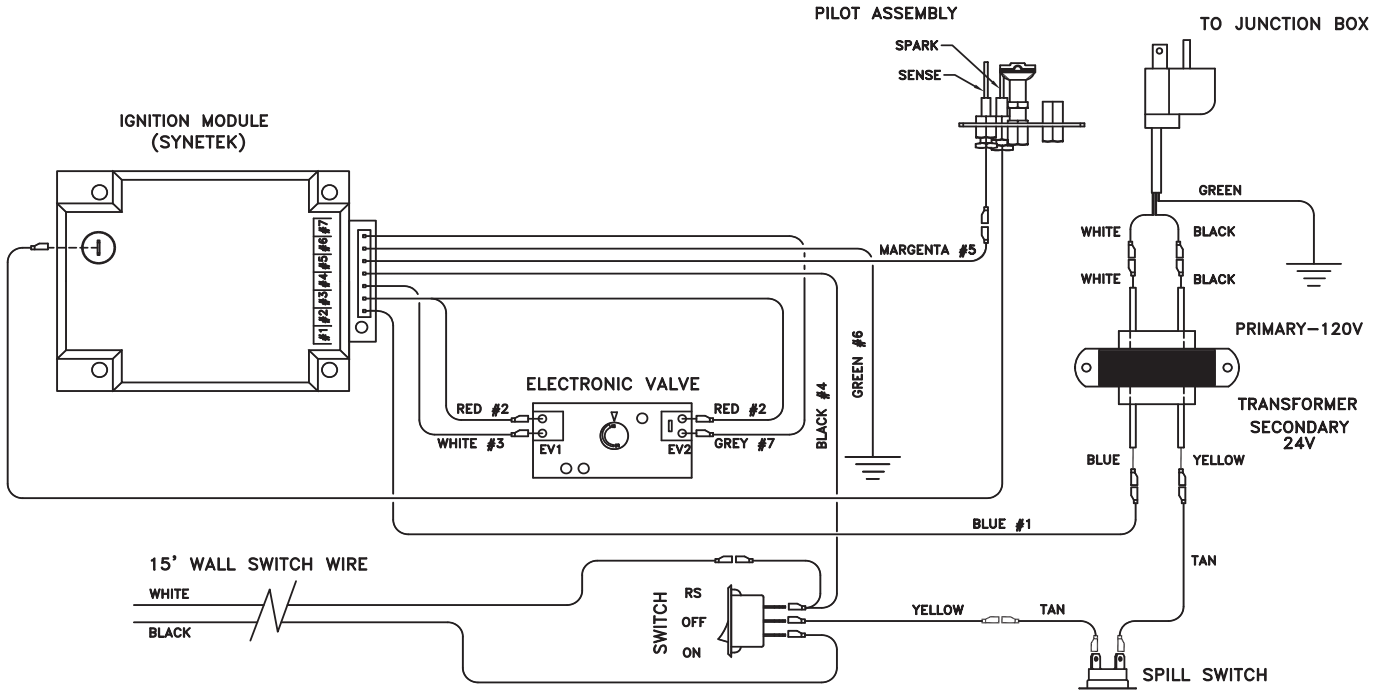


Figure 17 -
Electronic Ignition System Wiring Diagram

FP2027

REMOTE WALL SWITCH

Position the wall switch. Do not extend beyond the 15' of wire.

OPTIONAL DC REMOTE SYSTEMS

These instructions replace the section entitled Hearth Mount in the Millivolt hand held remote instructions supplied with the remote.

1. Plug in remote connector wire to remote receiver.
2. Connect the wire terminal from the remote receiver. This replaces the 15' wall switch connection to the switch. *Figure 17*
3. Mount remote control receiver at junction box (for your wall switch).

ROCK WOOL PLACEMENT

1. Place rock wool on burner to provide glowing embers. For best results, pull the rock wool apart into pieces the size of a nickel or dime.
2. Distribute one layer of rock wool to cover the entire burner. *Figure 18*
3. Place the logs on the burner. Refer to Log Placement Section.

If the flame is blue and only in the center, turn off unit and allow to cool. After unit cools, remove logs. If the back holes are clear, add more rock wool to the center of the burner. Replace logs and check flame again. Save left over rock wool to refresh when cleaning later. Too much rock wool can disturb the flame and cause sooting on the glass or logs.

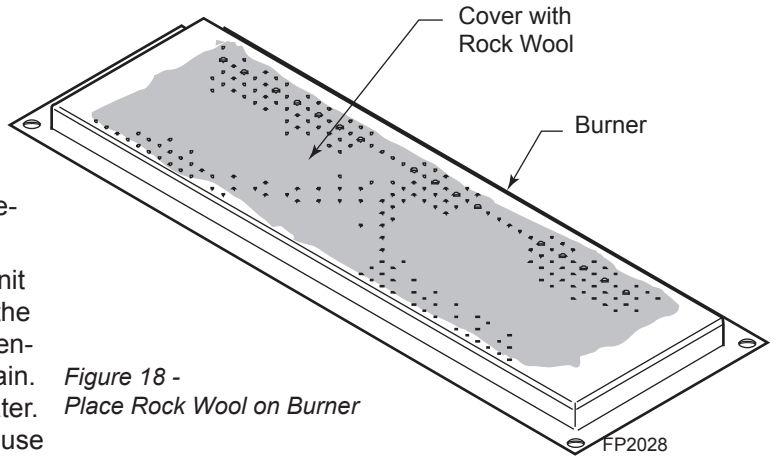


Figure 18 -
Place Rock Wool on Burner

WARNING **Do not use the entire bag of rock wool to cover the burner. This could cause the flame to burn poorly and may lead to sooting.**

LOG PLACEMENT

Figure 19

1. Place rear log (#1) on grate assembly. Log should rest firmly on the two log mounting pins on the horizontal bars.
2. Place bottom left log (#2) on grate. Rest the back side of the log in the flat area of the rear log.
3. Place bottom right log (#3) on grate. Rest the back side of the log in the flat area of the rear log.
4. Place the top log (#4) on the rear log. Nest the forked end of the top left log into the fork of the rear log. Rest the narrow end of the top on the vertical grate bar.

LAVA ROCK AND EMBER PLACEMENT

Sprinkle lava rock on the floor of the inner combustion chamber. Evenly distribute the rock. Do not pile the lava rock up in front of grate. Do not place lava rock on the burner. If desired, purchase optional embers to decorate the floor of the fireplace.

WARNING **Do not sprinkle the lava rock or ember chunks on top of the burner. This may cause potential sooting, glass breakage and a fire hazard.**

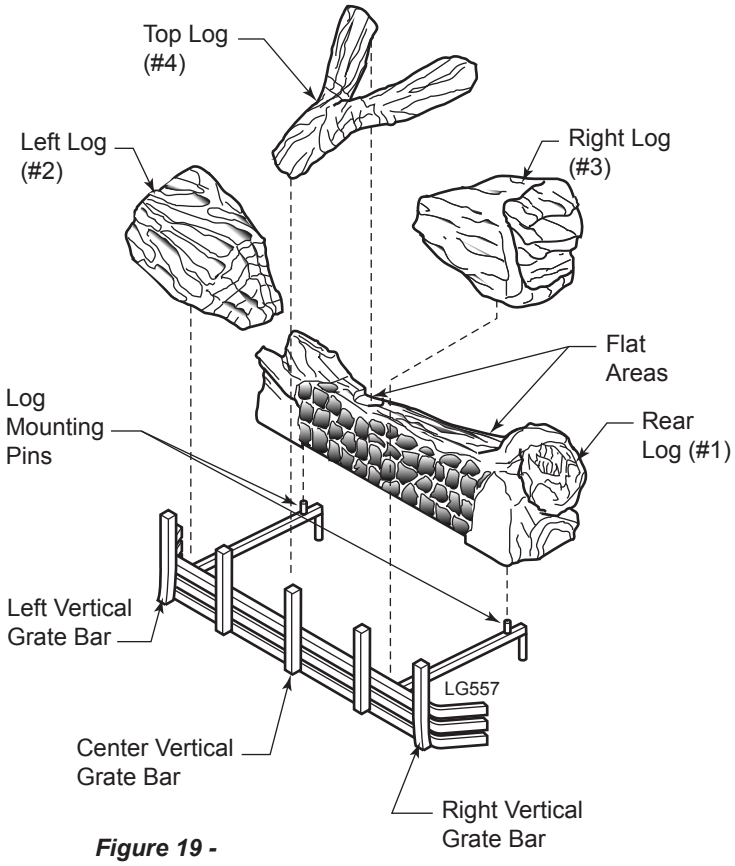


Figure 19 -
Log Placement

FOR YOUR SAFETY READ BEFORE LIGHTING

WARNING **If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.**

A. This appliance is equipped with a pilot which must be lit with an ignitor while following these instructions exactly.

B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS:

- Turn off all gas to the appliance.
- Open windows.
- Do not attempt to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in, or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it. Call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part of it has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any pat of the control system and any gas control that has been under water.

LIGHTING PILOT FOR THE FIRST TIME

INITIAL LIGHTING

Purge air from the supply line as follows:

- Open main shut-off valve.
- Unscrew main pressure test point.
- Leave inlet test screw open until gas comes in.
- When gas is flowing, tighten inlet screw immediately.

WARNING **Never use an open flame to check for gas leaks.**

LEAK TESTING

1. Follow the pipe from the gas supply line connection to the gas valve. Check connection for leaks with soap and water mixture.
2. Next check for gas leaks at the burner with soap and water mixture.
3. Check the pilot for gas leaks with soap and water mixture.

LIGHTING PILOT FOR THE FIRST TIME

APPROVED LEAK TESTING METHOD

You may check for gas leaks with the following methods only:

- Soap and water solution
- An approved leak testing spray
- Electronic sniffer

DANGER

Never check for gas leaks with open flame!

WARNING

If using a soap and water solution to test for leaks, DO NOT spray solution onto control body.

NOTE: Remove any excessive pipe compound from the connections. Excessive pipe compound can set off electronic sniffers.

Check for gas leaks in each of the following locations:

Pipe from the gas supply line connection to the gas valve

- Burner connections
- Pilot
- Each joint or connection
- Field made joints / gas shut-off valve
- Factory made joints
- All joints on valve and control body

LIGHTING PILOT

WARNING

The control has an interlock device that does not allow the lighting of the fireplace up to the moment the safety device of the flame has not interrupted the gas flow. After that period of time (when the magnet is closed), it is possible to start the lighting operation.

The gas control knob is designed to be operated by hand. DO NOT use any tools during this operation. Damaged knobs may result in serious injury.

1. Depress and turn knob counterclockwise ↶ to pilot position.
2. Depress fully and hold pilot gas knob. The electronic ignitor will automatically ignite the pilot. Keep knob fully depressed for a few seconds. Release and check that pilot continues to burn.

If the pilot does not stay lit, repeat Steps 1 and 2.

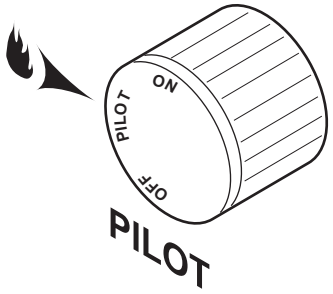


Figure 20 - Pilot Position

LIGHTING BURNER

MAIN BURNER SWITCH

The “ON/OFF” switch for the main burner can be found behind the door of the fireplace. This switch allows you to turn on and to turn off the main burner without using the gas valve knob. Make sure the button is in the “ON” position to light the main burner. *Figure 21*

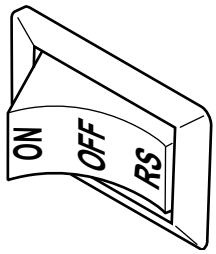


Figure 21 - On/Off/RS Switch

LIGHTING THE BURNER

Depress and turn the knob counterclockwise to the “ON” position. *Figure 22.* It will take less than four (4) seconds for the burner to ignite.

PILOT POSITION

Depress and turn knob to pilot position to keep burner off while maintaining the pilot light. *Figure 23*

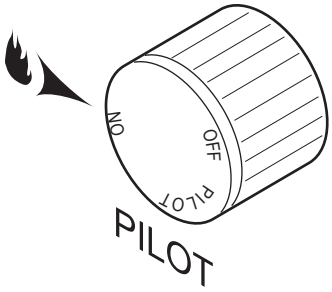


Figure 22 - On Position

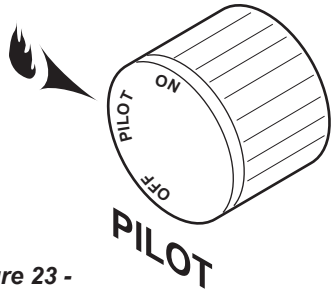


Figure 23 - Pilot Position

LIGHTING PILOT

Depress and turn knob clockwise to “OFF” position. *Figure 24*

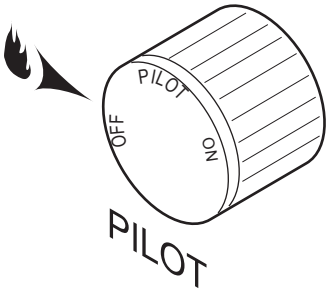


Figure 27 - Off Position

FOR YOUR SAFETY READ BEFORE LIGHTING

WARNING **If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.**

A. This appliance is equipped with an ignition device (Piezo) which automatically lights the pilot. Do NOT try to light the burner by hand.

B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS:

- Turn off all gas to the appliance.
- Open windows.
- Do not attempt to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Turn off all electric power to the appliance.

D. Do not use this appliance if any part of it has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any pat of the control system and any gas control that has been under water.

LIGHTING ELECTRONIC IGN

1. **STOP!** Read the safety information above.
2. Set thermostat to lowest setting. Then turn switch to off position.
3. Turn off all electric power to the appliance.
4. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. Wait 5 minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas **STOP!** Follow "B" - *What to Do if You Smell Gas* above. If you do not smell gas, go to the next step.
6. Turn on all electric power to appliance.
7. Set thermostat to desired setting or turn RS-OFF-ON rocker switch to "ON".
8. If the appliance will not operate, follow the instructions *To Turn Off Gas* below, and call your service technician or gas supplier.

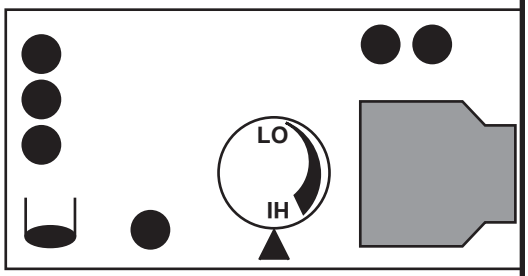


Figure 25 - Electronic Gas Valve

TO TURN OFF GAS

1. Turn RS-OFF-ON rocker switch to "OFF".
2. Turn off all electric power to the appliance if service is to be performed.
3. Close lower door.

WARNING

Turn off gas before servicing fireplace. It is recommended that a qualified service technician perform these check-ups at the beginning of each heating season.

BURNER, PILOT AND CONTROL COMPARTMENT

Keep the control compartment, logs and burner areas surrounding the logs clean by vacuuming or brushing at least twice a year. Make sure the burner porting, pilot air opening and burner air openings are free of obstructions at all times.

PILOT FLAME

The flames from the pilot should be visually checked as soon as the heater is installed and periodically during normal operation. The pilot flame must always be present when the fireplace is in operation. *Figure 26.* The pilot flame has three distinct flames, one engulfing the thermopile, one engulfing the thermocouple and the other reaching to the main burner.

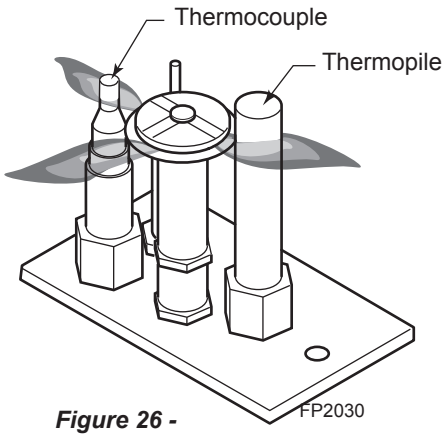


Figure 26 - Pilot Flame

BURNER

Inspect area around the injector. Remove any lint or foreign material with a brush or vacuum.

BURNER FLAME

The flames from the burner should be visually checked as soon as the heater is installed and periodically during normal operation. In normal operation, at full rate, and after operating for about 15 to 30 minutes, the flame should be yellow and slightly taller than the rear log. *Figure 27*

NOTE: The type of installation, vent system configuration and wind effects may cause the flame patterns to vary.

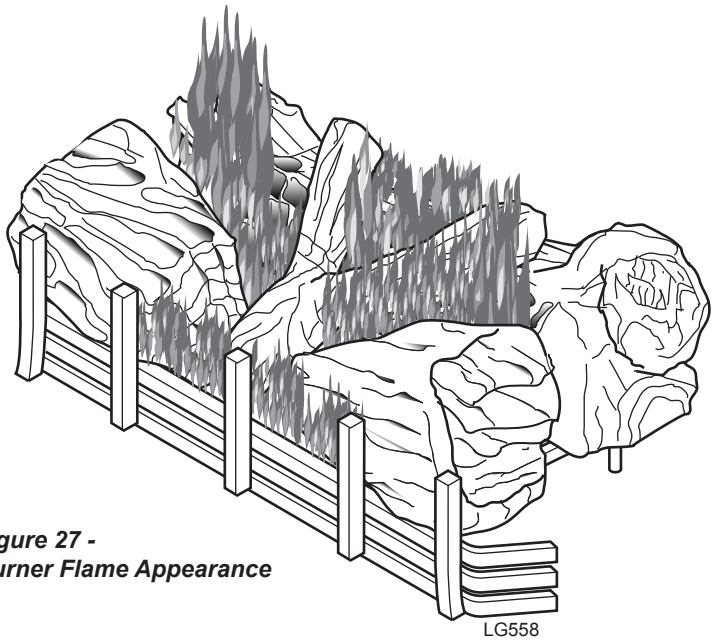


Figure 27 - Burner Flame Appearance

VENT SYSTEM

The fireplace and venting system should be inspected before initial use and at least annually by a qualified field service person. Inspect the external vent cap on a regular basis to make sure that no debris is interfering with the airflow. Inspect entire venting system to ensure proper function.

LOGS

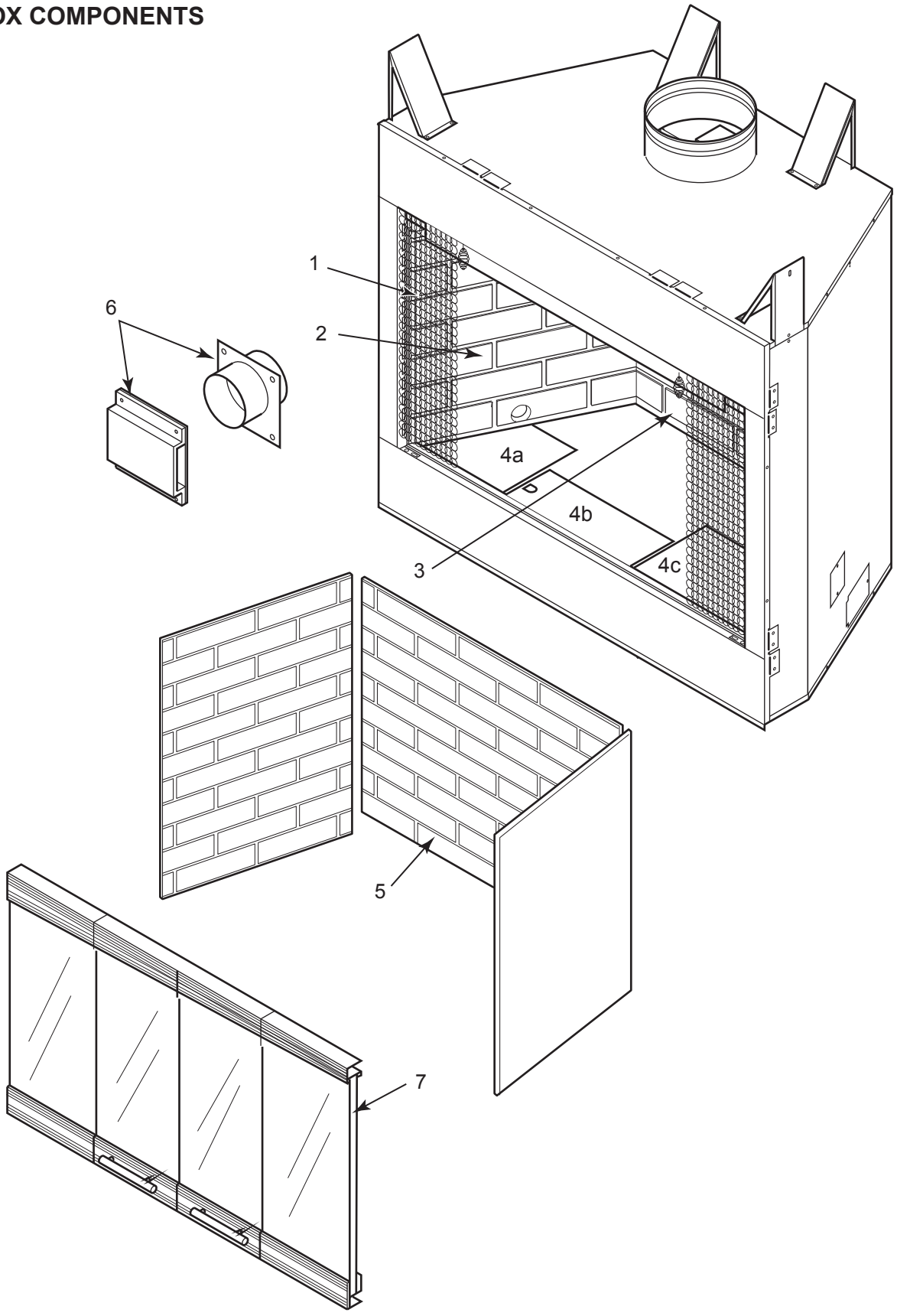
Leave logs installed in the fireplace for cleaning. Vacuum surface of the logs with a brush attachment. If logs must be removed for cleaning, handle carefully by holding gently at each end. Gloves are recommended to prevent skin irritation from ceramic fibers. If skin becomes irritated, wash gently with soap and water. Vacuum surface of logs with brush attachment or brush logs with a soft bristle brush (i.e. clean, dry paintbrush). To place logs back in the fireplace, refer to “Log Placement” found in the *Final Installation* section.

NOTE: Do not use cleaning fluid to clean logs.

ROCK WOOL

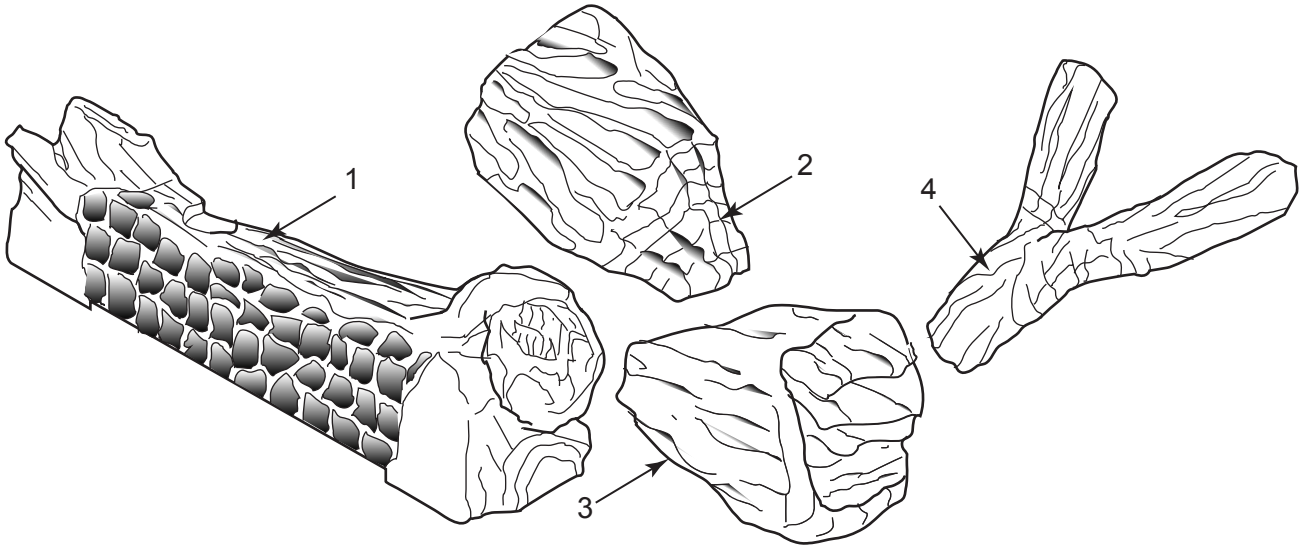
Replace or add rock wool as required following installation instructions in the *Final Installation* section of this manual.

FIREBOX COMPONENTS



FIREBOX COMPONENTS

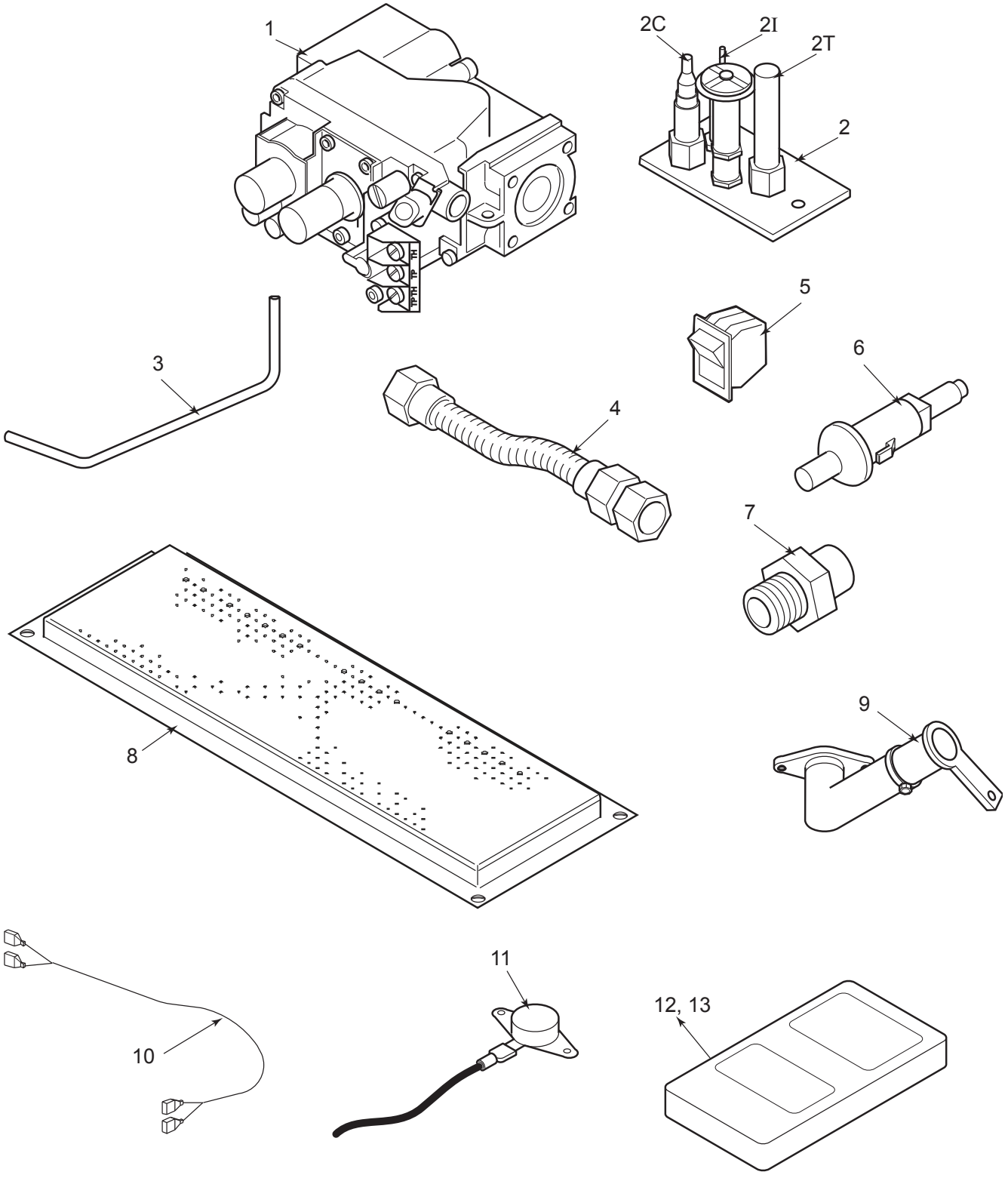
Item	Description	Qty.	400BBV	400SBV	500SBV
1.	Pull Screen Panel	2	61D0001	61D0001	61D0003
2.	Refractory Side	2	n/a	61D0101	61D0101
3.	Refractory Back	1	n/a	61D0102	61D0102
4a.	Left Refractory	1	n/a	62D1015	62D2015
4b.	Middle Refractory	1	n/a	62D1016	62D2016
4c.	Right Refractory	1	n/a	62D1017	62D2017
Optional Field Installed Accessoriesd					
5.	Firebrick Assembly	1	F400BBVW	n/a	n/a
6.	Outside Air Kit	1	OAC4	OAC4	OAC4
7.	Black Glass Door Assembly	1	GD36BA	GD36BA	GD36BA
7.	Polished Brass Glass Door Assembly	1	GD36PBA	GD36PBA	GD36PBA
7.	Stainless Glass Door Assembly	1	GD36SSA	GD36SSA	GD36SSA



LOGS

Item	Description	Qty.	400BBV	400SBV	500SBV
1.	Rear Log - #1	1	54D0122	54D0117	54D0331
2.	Right Log - #3	1	54D0123	54D0118	54D0358
3.	Left Log - #2	1	54D0124	54D0119	54D0359
4.	Center Log - #4	1	54D0125	54D0120	54D0120

STANDING PILOT - MILLIVOLT CONTROL



STANDING PILOT - MILLIVOLT CONTROL

Item	Description	Qty.	400BBVNV	400BBVPV	400SBVNV	400SBVPV	500SBVNV	500SBVPV
1.	Gas Valve Assembly	1	37D0117	37D0118	37D0117	37D0118	37D0117	37D0118
2.	Pilot Assembly	1	37D0018	37D0019	37D0018	37D0019	37D0018	37D0019
2C.	Replacement Thermocouple	1	37D1067	37D1067	37D1067	37D1067	37D1067	37D1067
2I.	Replacement Igniter and Wire	1	37D1069	37D1069	37D1069	37D1069	37D1069	37D1069
2T.	Replacement Thermopile	1	37D1068	37D1068	37D1068	37D1068	37D1068	37D1068
3.	Burner Tube	1	62D4051	62D4051	62D4052	62D4052	62D4053	62D4053
4.	Flexhose with Shut-off Valve	1	23D6046	23D6046	23D6046	23D6046	23D6046	23D6046
5.	Rocker Switch	1	41D0048	41D0048	41D0048	41D0048	41D0048	41D0048
6.	Piezo Igniter	1	14D0503	14D0503	14D0503	14D0503	14D0503	14D0503
7.	Injector	1	62D3006	62D3005	62D3004	20H3143	62D3003	59D0094
8.	Burner Assembly	1	54D0200	54D0200	54D0001	54D0001	54D0329	54D0329
9.	Venturi	1	45D0600	45D0600	45D0600	45D0600	45D0600	45D0600
10.	Wire Assembly	1	44D0500	44D0500	44D0500	44D0500	44D0500	44D0500
10.	Wire Assembly	1	44D0501	44D0501	44D0501	44D0501	44D0501	44D0501
11.	Spill Switch	1	62D0048	62D0048	073746	073746	073746	073746
Accessories								
12.	Remote Control On/Off	1	RCM/RCB	RCM/RCB	RCM/RCB	RCM/RC	RCM/RCB	RCM/RCB
13.	wall Switch Kit	1	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS

Fuel Conversion Kits - Millivolt

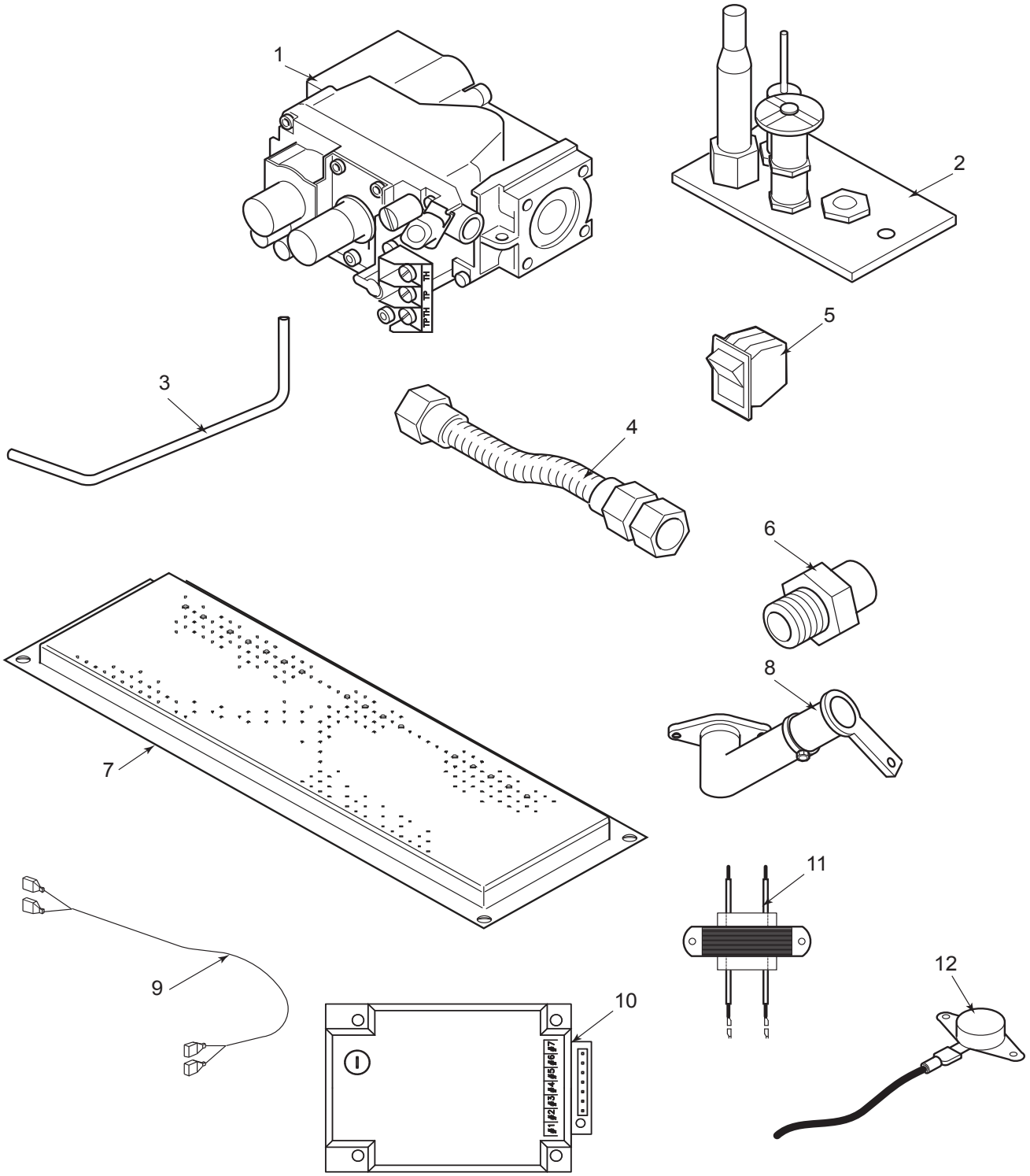
Natural Gas to LP

400BBV	Kit # 400BBVCKP
400SBV	Kit # 400SBVCKP
500SBV	Kit # 500SBVCKP

LP to Natural Gas

400BBV	Kit # 400BBVCKN
400SBV	Kit # 400SBVCKN
500SBV	Kit # 500SBVCKN

ELECTRONIC IGNITION



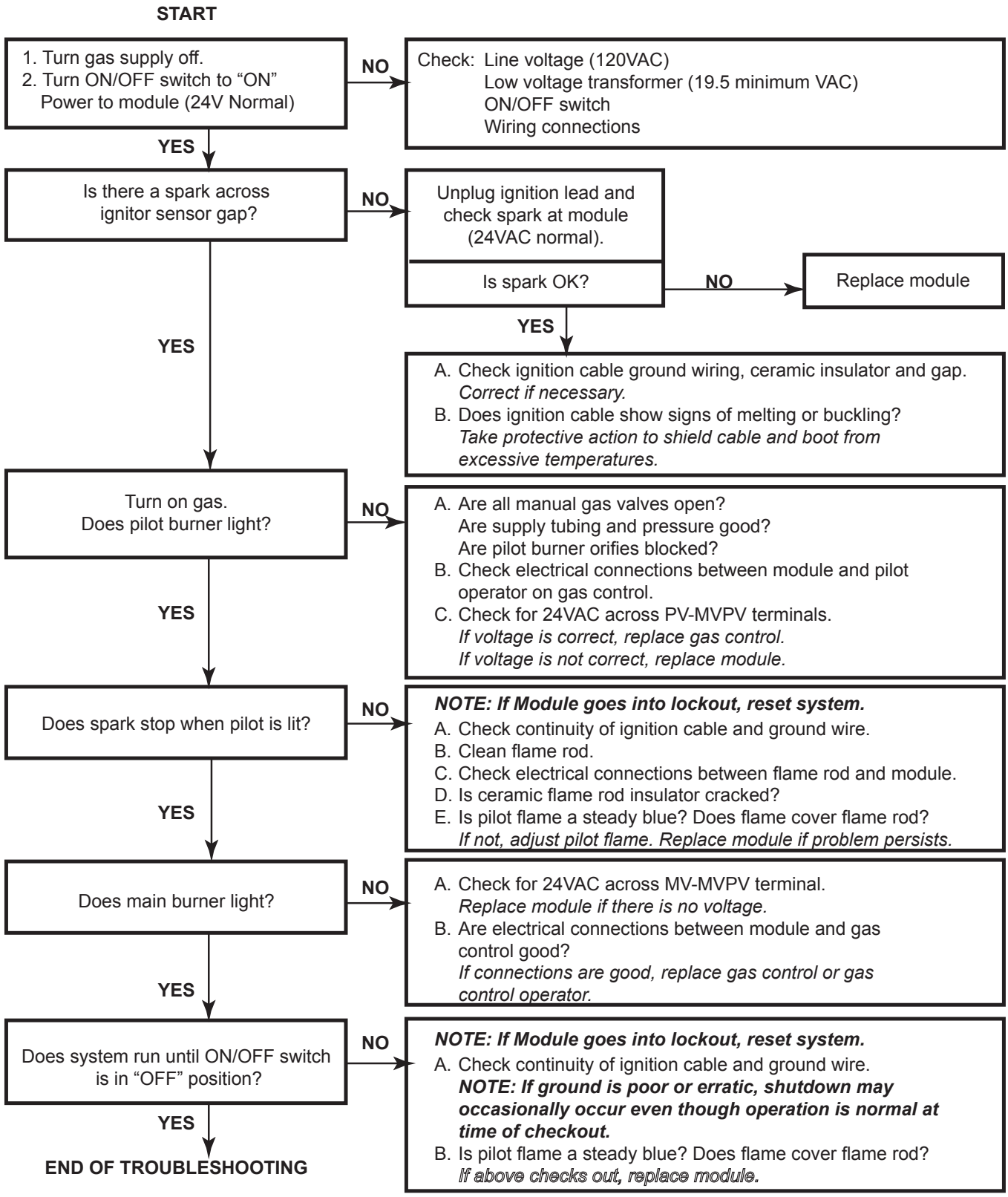
ELECTRONIC IGNITION

Item	Description	Qty.	400BBVNV	400BBVPV	400SBVNV	400SBVPV	500SBVNV	500SBVPV
1.	Gas Valve Assembly	1	37D0016	37D0017	37D0016	37D0017	37D0016	37D0017
2.	Pilot Assembly	1	37D0020	37D0021	37D0020	37D0021	37D0020	37D0021
3.	Burner Tube	1	62D4051	62D4051	62D4052	62D4052	62D4053	62D4053
4.	Flexhose with Shut-off Valve	1	23D6046	23D6046	23D6046	23D6046	23D6046	23D6046
5.	Rocker Switch	1	41D0048	41D0048	41D0048	41D0048	41D0048	41D0048
6.	Injector	1	62D3006	62D3005	62D3004	20H3143	62D3003	62D0094
7.	Burner Assembly	1	54D0200	54D0200	54D0001	54D0001	54D0329	54D0329
8.	Venturi	1	45D0059	45D0059	45D0059	45D0059	45D0059	45D0059
9.	Wire Assembly	1	54D2007	54D2007	54D2007	54D2007	54D2007	54D2007
10.	Ignition Module	1	37D0325	37D0325	37D0325	37D0325	37D0325	37D0325
11.	Transformer	1	37D0027	37D0027	37D0027	37D0027	37D0027	37D0027
12.	Spill Switch	1	62d0048	62d0048	073746	073746	073746	073746

STANDING PILOT IGNITION

SYMPTOM	POSSIBLE CAUSE	ACTION
1. Spark igniter will not light pilot after repeated triggering of piezo.	A. Wire disonnected.	A. Open door and check to make sure wire is connected to igniter.
	B. Defective igniter.	B. Check for spark at electrode and pilot. If no spark and electrode wire is properly connected, replace pilot assembly.
	C. No gas or low gas pressure.	C. Check remote/manual shut-off valve from fireplace. Low pressure can be caused by bent lines, restricted lines, low pressure line pressure. Consult with plumber or gas supplier.
	D. No Propane/LPG in tank.	D. Check Propane/LPG tank. Refill tank.
2. Pilot will not stay lit after carefully following lighting instructions.	A. Defective thermocouple.	A. Check that thermocouple flame impinges on thermocouple. Clean and/or adjust pilot for maximum flame impingement. Ensure that the thermocouple connection at the gas valve is fully inserted and tight. Disconnect the thermocouple from the valve, place one millivolt lead wire on the tip of the thermocouple and the other meter lead wire on the thermocouple copper lead. Start the pilot and hold the valve knob in. If the millivolt reading is less than 15m V, replace pilot assembly.
	B. Defective valve.	B. If thermocouple is producing more than 15m V, replace faulty valve.
3. Pilot burning, valve knob tuned to “ON”, switch is turned to “ON” or “RS”, but burner will not ignite.	A. Defective switch, wall switch, remote control or wire.	A. Check switch and wire for proper connection. Place jumper wires across terminals of switch. If burner comes on, replace defective switch. If the switch is OK, repeat the same procedure on remote control. If burner comes on, replace remote control. Place jumper wire across wire at gas valves (terminals marked TH and TP/TH). If burner comes on, wires are faulty or connections are bad. Replace wire.
	B. Pilot flame too small.	B. If pilot flame is not close enough to the thermopile, adjust pilot flame.
	C. Defective or malfunctioning thermopile.	C. Check thermopile wire connections to make sure all are tight and that the thermopile is fully inserted into pilot assembly. Check thermopile with a millivolt meter. Connect leads to TP and TP/TH terminals on the control valve. If meter reading is below 325m V, replace pilot assembly.
	D. Defective valve.	D. Turn valve knob to “ON” and switch to “ON”. Take a reading at the thermopile leads (TP & TP/TH) on the valve. If the meter reads greater than 175m V and the burner does not light, replace defective valve.
4. Frequent pilot outage problem.	A. Pilot flame may be too high or too low, causing pilot safety to drop out.	A. Clean and adjust the pilot flame for maximum flame impingement on thermocouple.
5. The pilot and main burner extinguish while in operation.	A. Inner vent pipe leaking exhaust gases back into system.	A. Check for flue product leak. Replace defective pipe section.
	B. Horizontal vent improperly pitched.	B. Check horizontal-vent piping is running upward 1/4” per foot. Do not run the pipe level or downward.
	C. Improper vent cap installation.	C. Check for proper installation and freedom from debris or blockage.

ELECTRONIC IGNITION


START
1. Turn gas supply off.
2. Turn ON/OFF switch to "ON"
Power to module (24V Normal)
NO
Check: Line voltage (120VAC)
Low voltage transformer (19.5 minimum VAC)
ON/OFF switch
Wiring connections
YES
Is there a spark across ignitor sensor gap?
NO
Unplug ignition lead and check spark at module (24VAC normal).
Is spark OK?
NO
Replace module
YES
YES
A. Check ignition cable ground wiring, ceramic insulator and gap. Correct if necessary.
B. Does ignition cable show signs of melting or buckling? Take protective action to shield cable and boot from excessive temperatures.
Turn on gas. Does pilot burner light?
NO
A. Are all manual gas valves open? Are supply tubing and pressure good? Are pilot burner orifices blocked?
B. Check electrical connections between module and pilot operator on gas control.
C. Check for 24VAC across PV-MVPV terminals. If voltage is correct, replace gas control. If voltage is not correct, replace module.
YES
Does spark stop when pilot is lit?
NO
NOTE: If Module goes into lockout, reset system.
A. Check continuity of ignition cable and ground wire.
B. Clean flame rod.
C. Check electrical connections between flame rod and module.
D. Is ceramic flame rod insulator cracked?
E. Is pilot flame a steady blue? Does flame cover flame rod? If not, adjust pilot flame. Replace module if problem persists.
YES
Does main burner light?
NO
A. Check for 24VAC across MV-MVPV terminal. Replace module if there is no voltage.
B. Are electrical connections between module and gas control good? If connections are good, replace gas control or gas control operator.
YES
Does system run until ON/OFF switch is in "OFF" position?
NO
NOTE: If Module goes into lockout, reset system.
A. Check continuity of ignition cable and ground wire.
NOTE: If ground is poor or erratic, shutdown may occasionally occur even though operation is normal at time of checkout.
B. Is pilot flame a steady blue? Does flame cover flame rod? If above checks out, replace module.
YES
END OF TROUBLESHOOTING

GENERAL TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	ACTION
1. Glass soots.	A. Flame impingement on logs.	A. Install log set per instructions. Inspect the injector and air intake area. Make sure this area does not have any blockage from debris and clean. Check gas supply.
2. Poor draft due to venting.	A. Too much offset.	A. Reduce offset and/or raise termination. If thermocouple is producing more than 15m B, replace faulty valve.
	B. Too many elbows.	B. Reduce number of elbows.
	C. Vent height too short.	C. Raise vent.
	D. Vent too close to roof line.	D. Raise vent.
	E. Blockage is rstricting venting capacity.	E. Remove blockage.
	F. Incorrect vent type.	F. Replace with proper B-vent.
	G. Venting has been constructed with too large or too small vent.	G. Replace with proper size.
	H. More than one appliance is using one venting system.	H. Construct a single venting system for each appliance.
3. Poor draft due to termination cap.	A. Cap obstructed by a decorative enclosure.	A. Remove or open enclosure or raise cap above it.
	B. Cap is crushed, damged or missing.	B. Replace cap.
4. Poor draft due to ext. environment.	A. Buildings, trees, roof lines interfering with venting.	A. Maintain proper clearances and heights to external obstructions; Be aware of overhangs.
	B. Wind	B. Use cap designed for high winds; raise venting height.
	C. Vent exposed to cold chase.	C. Insulate chase.
	D. Vent exposed to cold weather.	D. Enclose vent within home.
5. Poor draft due to internal environment.	A. Negative air pressure.	A. To test for negative air pressure, open a window in the room with the fireplace to see if the unit starts drafting correctly. Make sure the damper system is in the open position.
6. Unit shuts down prematurely.	A. Blockage or restriction in venting.	A. Check for and remove blockage and light pilot following lighting instructions.

Massachusetts Residents Only — Please read and follow these special requirements

NOTE REGARDING VENTED PRODUCTS

This product must be installed by a licensed plumber or gas fitter when installed within the Commonwealth of Massachusetts.

Any residence with a direct vent product must have a CO detector installed in the residence.

Installation of the fireplace or vented gas log in the State of Massachusetts requires the damper to be permanently removed or welded in the fully open position.

In addition, a naturally vented gas log may not be installed in a bedroom or bathroom in the State of Massachusetts.

Flex line installation must not exceed 36 inches and must have a T shutoff valve.

NOTE REGARDING VENT FREE PRODUCTS

This product must be installed by a licensed plumber or gas fitter when installed within the Commonwealth of Massachusetts.

In addition, vent free products may not be installed in a bedroom or bathroom regardless of size or type in the State of Massachusetts.

Flex line installation must not exceed 36 inches and must have a T shutoff valve.

CARBON MONOXIDE DETECTOR REQUIREMENTS

(2) Revise 10.8.3 by adding the following additional requirements:

(a) For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

1. **Installation of carbon monoxide detectors.** At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gas fitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gas fitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detectors

a. In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.

b. In the event that the requirements of this subdivision can not be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.

2. **Approved Carbon Monoxide Detectors.** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.

3. **Signage.** A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, “GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS.”

4. **Inspection.** The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08(2)(a)1 through 4.

(b) **Exemptions:** The following equipment is exempt from 248 CMR 5.08(2)(a)1 through 4:

1. The equipment listed in Chapter 10 entitled "Equipment Not Required To Be Vented" in the most current edition of NFPA 54 as adopted by the Board; and

2. Product Approved side wall horizontally vented gas fueled equipment installed in a room or structure separate from the dwelling, building or structure used in whole or in part for residential purposes.

(c) **Manufacturer requirements — Gas Equipment Venting System Provided.** When the manufacturer of Product Approved side wall horizontally vented gas equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for installation of the equipment and the venting system shall include:

1. Detailed instructions for the installation of the venting system design or the venting system components; and

2. A complete parts list for the venting system design or venting system.

(d) **Manufacturer requirements — Gas Equipment Venting System Not Provided.** When the manufacturer of a Product Approved side wall horizontally vented gas fueled equipment does not provide the parts for venting the flue gases, but identifies “special venting systems,” the following requirements shall be satisfied by the manufacturer:

1. The referenced "special venting system" instructions shall be included with the appliance or equipment installation instructions; and

2. The “special venting systems” shall be Product Approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

(e) A copy of all installation instructions for all Product Approved side wall horizontally vented gas fueled equipment, all venting instructions, all parts lists for venting instructions, and/or all venting design

LIMITED LIFETIME WARRANTY POLICY

LIFETIME WARRANTY

The following components are warranted for life to the original owner, subject to proof of purchase; Firebox, Combustion Chamber, Heat Exchanger, Grate and Stainless Steel Burners.

FIVE YEAR WARRANTY

The following components are warranted for five (5) years to the original owner, subject to proof of purchase; Ceramic Fiber Logs.

BASIC WARRANTY

MHSC warrants the components and materials in your gas appliance to be free from manufacturing and material defects for a period of two (2) years from date of installation. After installation, if any of the components manufactured by MHSC in the appliance are found to be defective in materials or workmanship, MHSC will, at its option, replace or repair the defective components at no charge to the original owner. MHSC will also pay for reasonable labor costs incurred in replacing or repairing such components for a period of two (2) years from date of installation. Any products presented for warranty repair must be accompanied by a dated proof of purchase.

This Limited Lifetime Warranty will be void if the appliance is not installed by a qualified installer in accordance with the installation instructions. The Limited Lifetime Warranty will also be void if the appliance is not operated and maintained according to the operating instructions supplied with the appliance, and does not extend to (1) firebox/burner assembly damage by accident, neglect, misuse, abuse, alterations, negligence of others, including the installation thereof by unqualified installers, (2) the cost of removal, reinstallation or transportation of defective parts on the appliance, or (3) incidental or consequential damage. All service work must be performed by an authorized service representative.

This warranty is expressly in lieu of other warranties, express or implied, including the warranty of merchantability of fitness for purpose and of all other obligations or liabilities. MHSC does not assume for it any other obligations or liabilities in connection with sale or use of the appliance. In states that do not allow limitations on how long an implied warranty lasts, or do not allow exclusion of indirect damage, those limitations of exclusions may not apply to you. You may also have additional rights not covered in the Limited Lifetime Warranty.

MHSC reserves the right to investigate any and all claims against the Limited Lifetime Warranty and decide upon method of settlement.

IF WARRANTY SERVICE IS NEEDED...

1. Contact your supplier. Make sure you have your warranty, your sales receipt and the model/serial number of your MHSC product.
2. DO NOT ATTEMPT TO DO ANY SERVICE WORK YOURSELF.

MHSC
149 Cleveland Drive • Paris, Kentucky 40361
www.mhsc.com